DEMONSTRATION REPORT

Demonstration of Advanced Geophysics and Classification Technologies on Munitions Response Sites Former Fort Ord, Monterey County, CA

ESTCP Project MR-201420

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14. ABSTRACT

CB&I Federal Services LLC (CB&I) was contracted by Environmental Security Technology Certification Program (ESTCP) under Contract No.W912HQ-14-C-0022 to perform this project (MR-201420), which was established to perform the Live Site Demonstration, Data Collection using a first generation MetalMapper (MM) in Dynamic Data Acquisition and Cued Modes at the former Fort Ord, located in Monterey County, California. Fort Ord is a closed installation that has an ongoing munitions response program managed by the U.S. Army Corps of Engineers (USACE), Sacramento District on behalf of the Fort Ord Base Realignment and Closure (BRAC) Office

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ACRONYMS AND ABBREVIATIONS

µs	Microseconds
Army	U.S. Department of the Army
BRAC	Base Realignment and Closure
BTG	Black Tusk Geophysics
BUD	Berkeley UXO Discriminator
CB&I	CB&I Federal Services LLC
cm	Centimeter(s)
DGM	Digital Geophysical Mapping
DTSC	California Department of Toxic Substances Control
EM	Electromagnetic
EPA	U.S. Environmental Protection Agency Region IX
ESTCP	Environmental Security Technology Certification Program
ft	Foot/Feet
FTP	File Transfer Protocol
GPS	Global Positioning System
Hz	Hertz
ID	Identification
IMU	Inertial Measurement Unit
ISO	Industry Standard Object
IVS	Instrument Verification Strip
KS/s	Kilo-samples per Second
m	Meter(s)
MEC	Munitions and Explosives of Concern
MM	MetalMapper
mm	Millimeter(s)
MPV	Man Portable Vector
MRA	Munitions Response Area
MRS	Munitions Response Site
MQO	Measurement Quality Objective
ms	Millisecond(s)
mV	Millivolt(s)
mV/A	Millivolt(s) per amp
NRL	Naval Research Laboratory

QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
ROC	Receiver Operating Characteristic
ROD	Record of Decision
RTK	Real-time Kinematic
TDEM	Time-domain Electromagnetic
TEMTADS	Time-domain Electromagnetic Multi-sensor Towed Array Detection System
TOI	Target(s) of Interest
UBC-GIF	University of British Columbia Geophysical Inversion Facility
USACE	U.S. Army Corps of Engineers
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WRT	White River Technologies

1.0 INTRODUCTION

CB&I Federal Services LLC (CB&I) was contracted by Environmental Security Technology Certification Program (ESTCP) under Contract No.W912HQ-14-C-0022 to perform this project (MR-201420), which was established to perform the Live Site Demonstration, Data Collection using a first generation MetalMapper (MM) in Dynamic Data Acquisition and Cued Modes at the former Fort Ord, located in Monterey County, California. Fort Ord is a closed installation that has an ongoing munitions response program managed by the U.S. Army Corps of Engineers (USACE), Sacramento District on behalf of the Fort Ord Base Realignment and Closure (BRAC) Office. The work was performed in accordance to the *Demonstration Plan, ESTCP Response Projects MR-201420, MetalMapper Surveys at Fort Ord* (CB&I, October 2014).

One objective of this project was to demonstrate the ability to collect data in dynamic and cued modes for munitions and explosives of concern (MEC) detection and identification (ID) using the MM, while simultaneously transferring the technology from the researchers (Geometrics and Black Tusk Geophysics [BTG]) to production companies (CB&I).

Another objective was to gain regulator acceptance. In order to accomplish this, data were collected that could be used as part of a treatability study. Preliminary results were presented to BRAC, U.S. Environmental Protection Agency Region IX (EPA), and base personnel.

The subject area was within Units 11 and 12 in the Munitions Response Area (MRA) at the former Fort Ord (**Figure 1-1**). Units 11 and 12 cover approximately 476 acres. The entire area has had full coverage surface MEC remediation, and digital geophysical mapping (DGM) has been performed using a vehicle towed array of three (Geonics Limited) Time-domain Electromagnetic (TDEM) High Sensitivity metal detectors (EM61-MK2) over the complete site, except small areas where terrain and a stand of oak trees precluded data collection. The results of the DGM following surface removal showed very high EM61-MK2 anomaly densities throughout most of the two Units (**Figures 1-2** and **1-3**).

The primary goal was to demonstrate if large munitions, such as 155 millimeter (mm) projectiles or larger at depths to 60 centimeters (cm), can be confidently classified within a challenging, high metallic debris background. In order to determine if this is possible, areas of relatively high, medium, and low anomaly densities were surveyed in both dynamic and cued mode for detection and classification respectively. While our primary goal was to find large MEC items in areas of high density clutter, the intention of CB&I was to classify all Targets of Interest (TOIs) including smaller munitions correctly, thereby reducing the number of unnecessary digs if subsurface removal is considered for these units.

During the course of the project, assistance including unexploded ordnance (UXO) support and use of facilities and equipment located on site were provided by BRAC and the BRAC contractor, Gilbane.

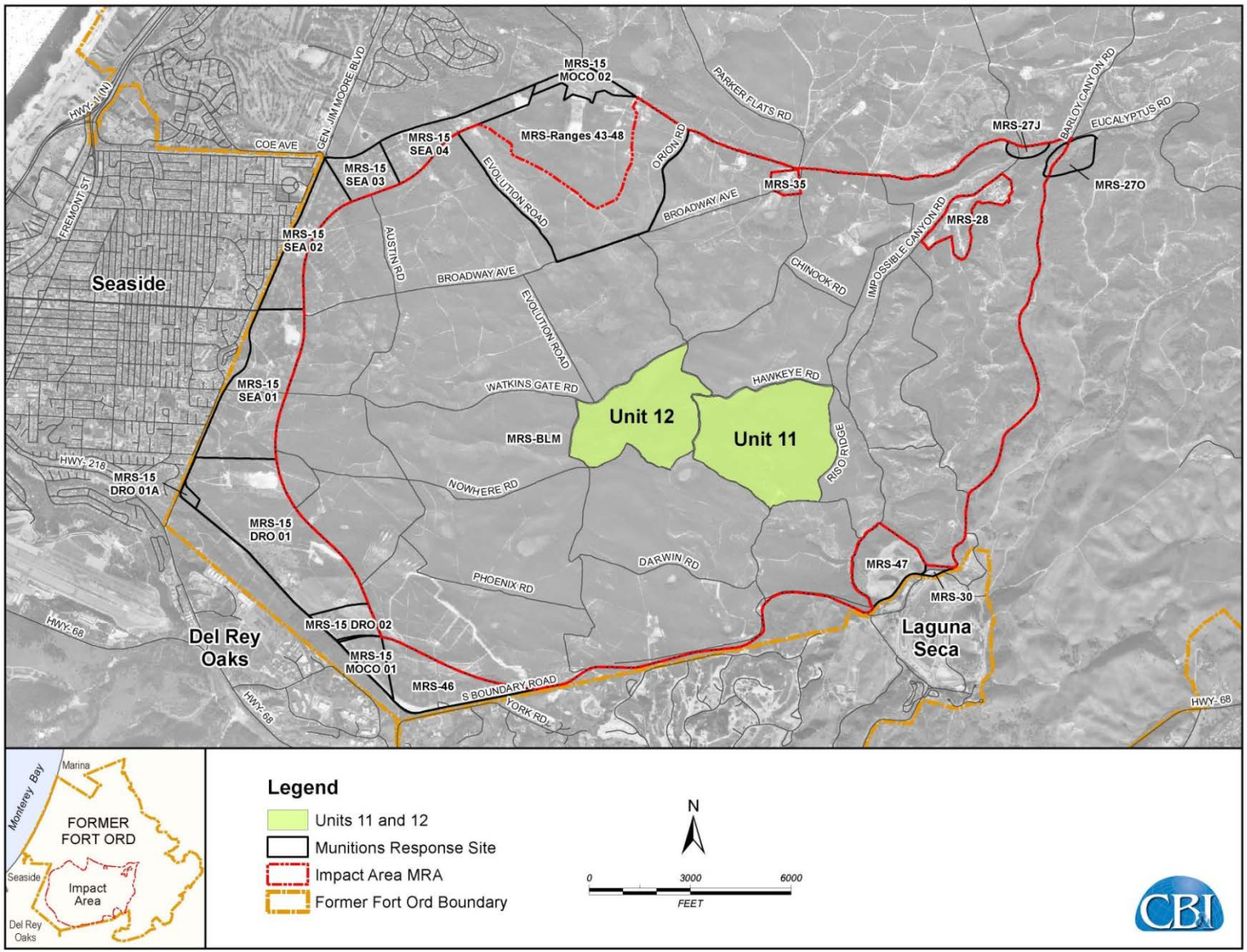


Figure 1-1: Units 11 and 12 in the Impact Area MRA at the Former Fort Ord

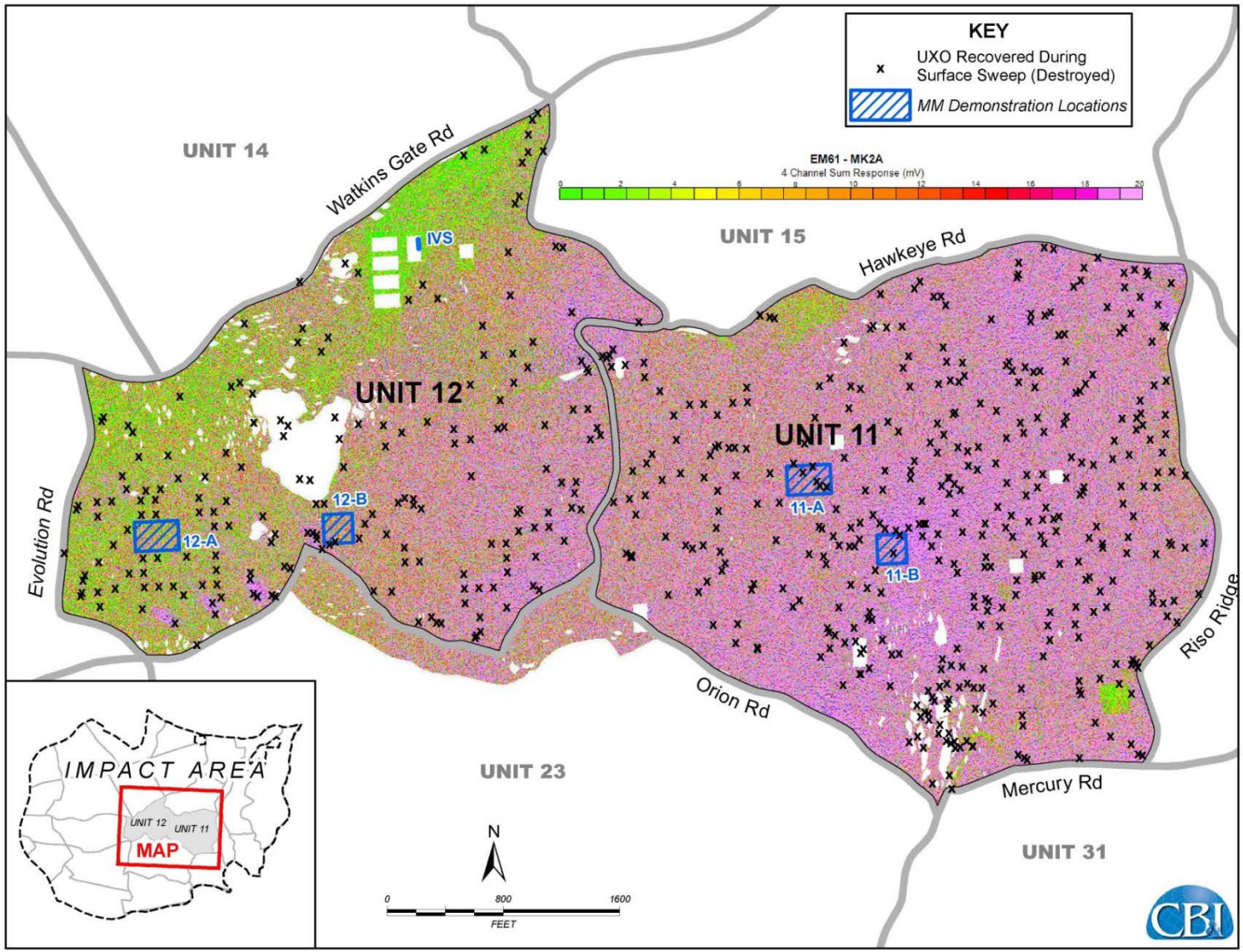


Figure 1-2: DGM and Surface Removal Results

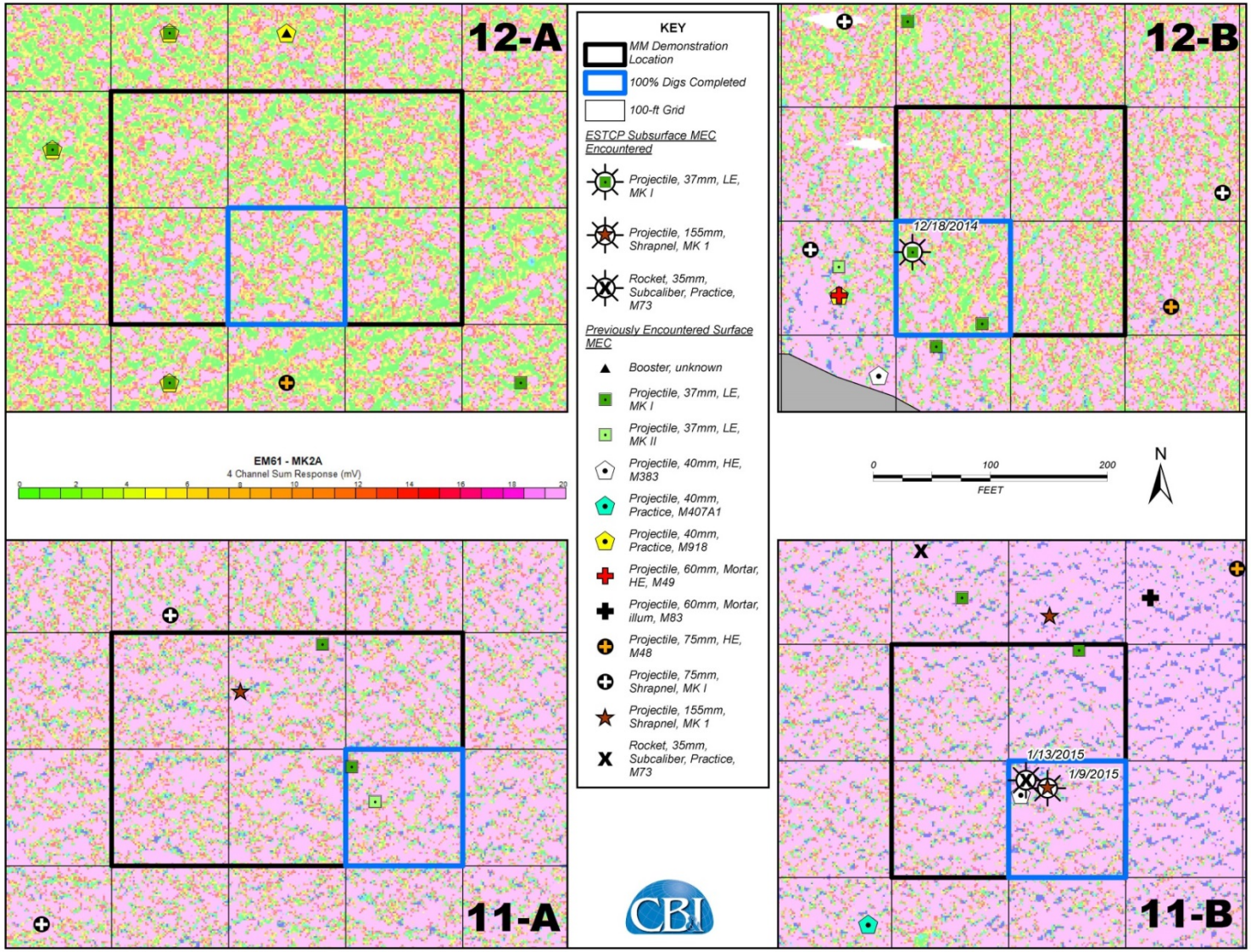


Figure 1-3: EM61 Data at Proposed MM Survey Areas

1.1 BACKGROUND

ESTCP contracted CB&I to collect both dynamic and cued MM data on approximately 5 acres within the Fort Ord MRA to demonstrate the use and performance of advanced classification techniques to reduce the number of expensive non-UXO excavations.

1.2 OBJECTIVE OF THE DEMONSTRATION

The objectives of this project were as follows:

1. Demonstrate if large munitions, such as 155mm projectiles to a depth of 60 cm, can be confidently classified within the range of background conditions (medium to high metallic density) that exist in the Impact Area at Fort Ord.
2. Demonstrate if smaller munitions, such as 40mm projectiles, can be confidently classified within the range of background conditions at Fort Ord.
3. Classify all TOIs.
4. Collect operational data (production and cost) that can be applied to planning future projects.
5. Provide training for project geophysicists in the use of the hardware and classification software, thereby facilitating the transfer of technology from the researchers to production companies.
6. Provide data to assist in gaining regulatory acceptance of the advanced classification technologies.
7. With additional budget and time, available objectives expanded to include:
    a. Use the dig results to determine if the existing EM61 data may be utilized to determine the existence of large munitions such as 155mm projectiles.

To meet the objectives, CB&I geophysicists were trained by Geometrics representatives in the use of the MM at the field location and collected MM data in dynamic and cued modes for MEC detection and classification in areas of relatively low, medium, medium-high, and high background density. CB&I geophysicists processed the MM data and performed advanced classification interpretation techniques to generate a prioritized dig list under the guidance of BTG geophysicists.

1.3 REGULATORY DRIVERS

MEC removal in Units 11 and 12 at the former Fort Ord is being conducted in accordance with the *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California* (ROD; U.S. Department of the Army [Army], 2008) The general remedial action objective is to manage "the potential risk to future land users from MEC at the Impact Area MRA." Surface removal in Units 11 and 12 has been completed. Subsurface removal may be required in some areas in the future depending on proposed land use.

In general, advanced classification sensors, data processing, and interpretation methods are new technologies gaining momentum for acceptance with regulatory agencies. Acceptance from the regulators will result in classification technologies being used at more clean-up sites, which will mean reduced numbers of excavations, which can ultimately reduce the overall costs of remedial actions.

The munitions response program at Fort Ord is conducted under the oversight of the California Department of Toxic Substances Control (DTSC) and the EPA. These agencies are familiar with advanced classification sensors, data processing, and interpretation methods, and they were receptive of the demonstration at Fort Ord.

2.0 TECHNOLOGY

Instruments for TDEM data collection in both dynamic and cued mode included a Geometrics MM (SN 1006) provided by USACE, Sacramento District combined with a Leica GS15 Real-time Kinematic (RTK) Global Positioning System (GPS). This equipment was deployed on a skid behind a bulldozer for dynamic data collection (**Figure 2-1**) and a skid mounted in front of a Bobcat T300 for cued data collection (**Figure 2-2**). Both configurations were designed for efficiency and high quality data collection.

To reduce the number of re-visits to the anomalies during cued data collection, White River Technologies (WRT) in-field Quality Control (QC) software was used to provide real time QC of the cued data to confirm the location of the intended target.

UXOLab software developed by BTG was used to perform MM data QC checks, processing, and interpretation. CB&I geophysicists were trained by BTG to use UXOLab software on site, through electronic and telephone communications, and in their office in Vancouver, Canada.

Figure 2-1: MM Configured for Dynamic Data Collection with Bulldozer at the Instrument Verification Strip

Figure 2-2: MM Configured for Cued Data Collection with Bobcat at the Instrument Verification Strip

2.1 TECHNOLOGY DESCRIPTION

The MM is an advanced TDEM sensor designed specifically for classification of MEC items. This system is a unique and innovative design in several respects:

- The antenna platform includes three mutually orthogonal transmitter loops and a spatial array of seven 3-axis receiver antennas (21 independent measurements of the transient secondary magnetic field).
- Electronically Switched TDEM Transmitter Loop Driver: The system is able to control the source and receiver combinations. Under control of the data acquisition computer, the output of the transmitter can be directed to any single loop or automatically multiplexed between loops. There is also control of the fundamental waveform period, duty cycle, and pulse polarity. Depending on the survey mode (e.g., static or dynamic), the fundamental frequency of transmission can be varied over the range $1.11 \leq f \leq 810$ hertz (Hz).

The design allows the MM to interrogate the subsurface object from a variety of angles and distances and subsequently perform advanced analysis of the received signals to provide quantitative information on the shape and electrical properties of the object. **Figure 2-3** presents a schematic of the system.

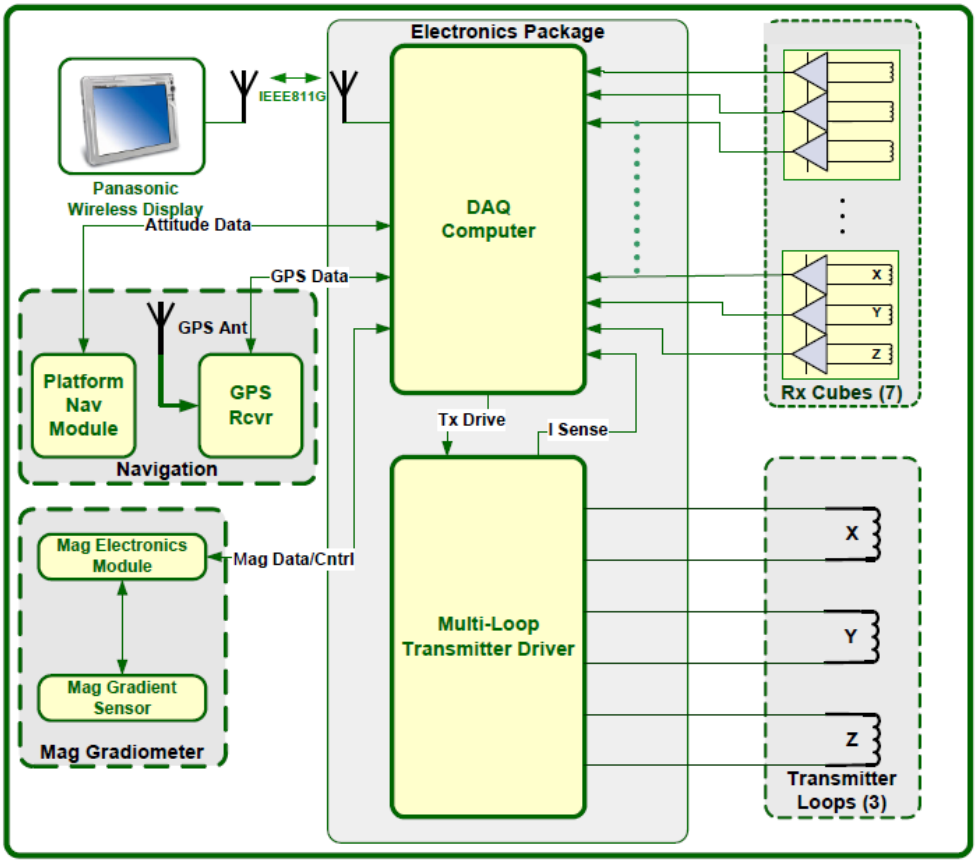


Figure 2-3: MM System Schematic

The diagram above shows the MM system configuration. In addition to the data acquisition system and transmitter loops and receiver cubes, the MM was integrated with a GPS and inertial measurement unit (IMU).

During data collection, real time QC and fine tuning of anomaly locations were accomplished using WRT's in-field software. Screen captures are presented in **Figure 2-4**. This software assists in providing a quick solution in the field so that the current target(s) being scrutinized can be centered under the sensor providing the most accurate resultant data and reducing the number of recollects needed.

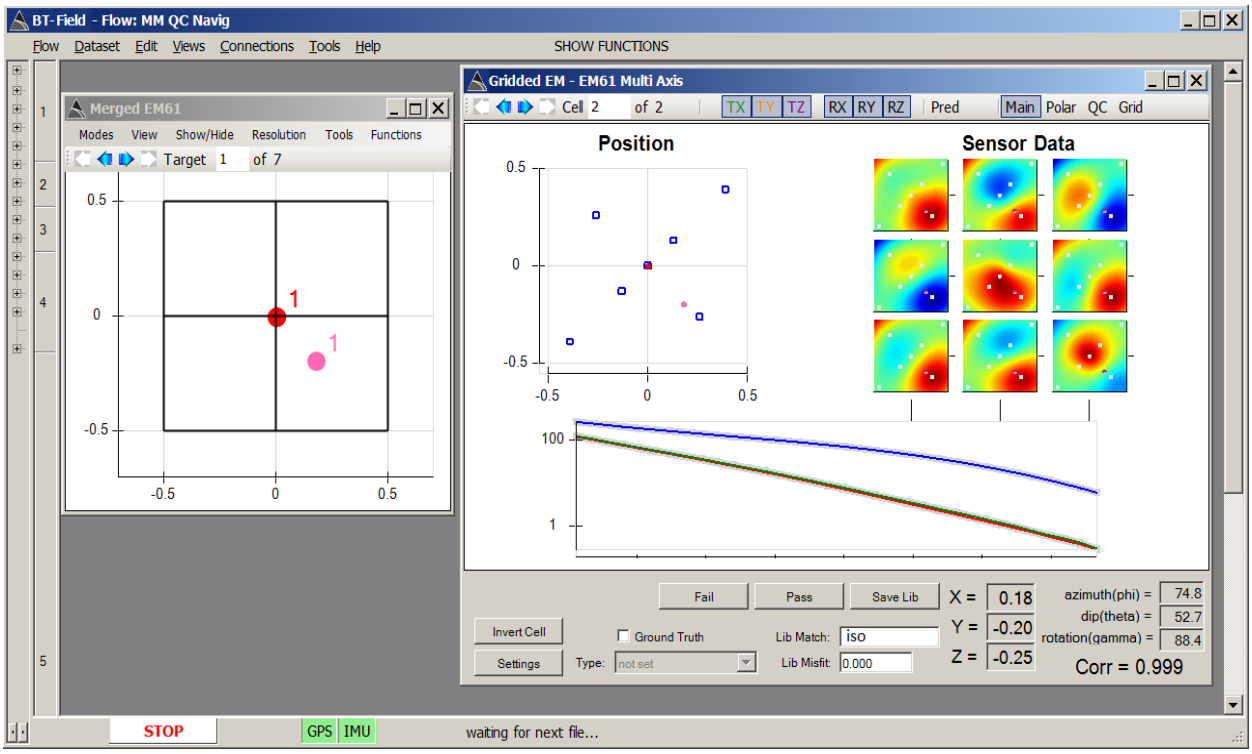
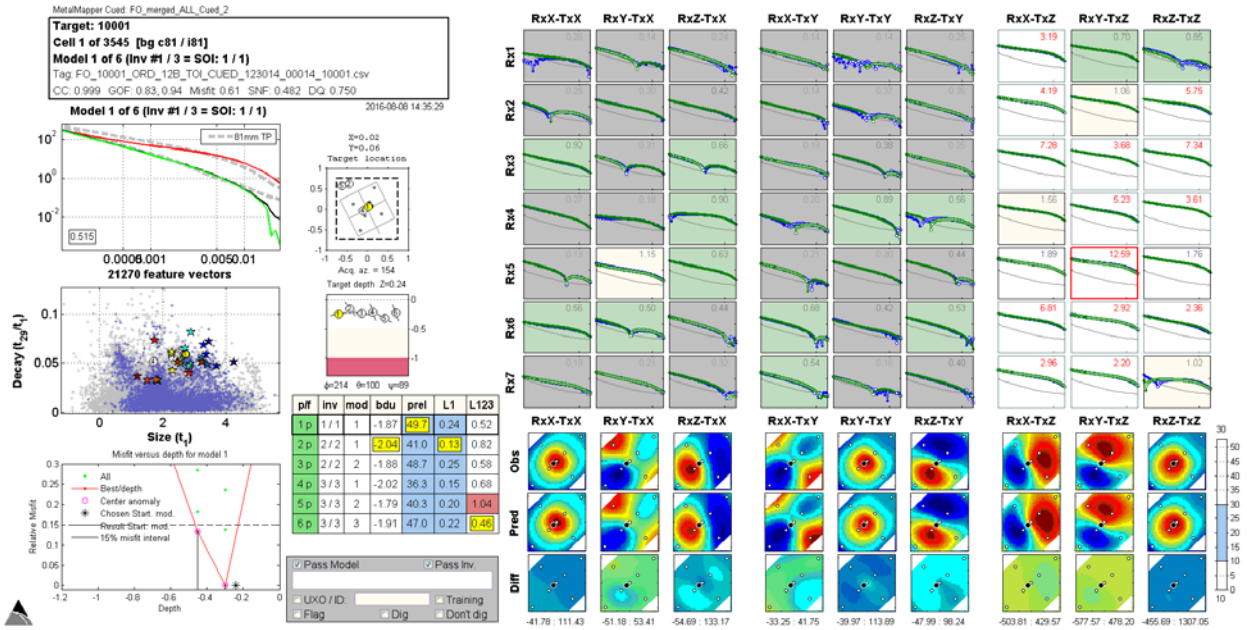


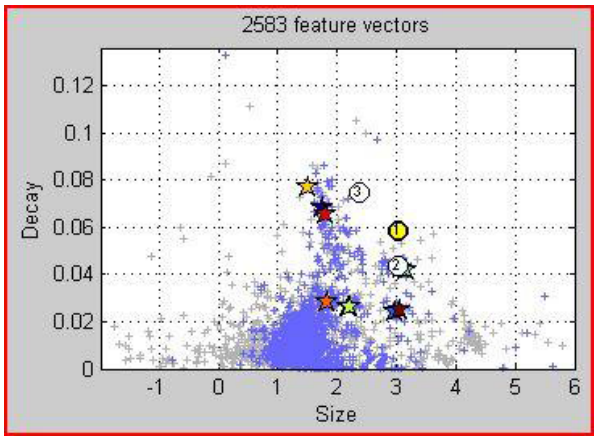
Figure 2-4: Field Inversion Software

The field screen capture shows the reacquired anomaly location and the predicted location from the cued MM data in the window on the left, and the QC polarizability curves and sensor and positional data on the right.

MM data processing, feature extraction, and classification were performed using the UXOLab software package. UXOLab contains modules for data visualization, data inversion, QC of inversion results, training data selection, and dig list creation via statistical or rule-based classification strategies. UXOLab is a MATLAB®-based software package developed over a six-year period at the University of British Columbia Geophysical Inversion Facility (UBC-GIF), principally through funding by the USACE Research and Development Center (DAAD19-00-1-0120). Over the past five years, BTG and UBC-GIF have considerably expanded the capabilities of the software. **Figure 2-5** below shows the analyst's screen during data review.



a) Analysts screen



b) Features plot

Figure 2-5: Data Analyst Inversion.

These screen captures are outputs from BTG's UXOLab. ***Figure 2-5a*** *shows the analyst's screen. Note that all transmitter/receiver pairs are reviewed at a single time along with the resulting inversion data showing polarizabilities and fit data (curve correlation with known munitions in the match library).* ***Figure 2-5b*** *is the feature vectors plot from UXOLab. It plots each anomaly (with decay and size variable) against TOIs in the match library.*

Once all the anomalies are classified and intrusive data are collected, the analyst's results are plotted on a receiver operating characteristic (ROC) curve (**Figure 2-6**) and evaluation of the success of digging all TOIs while reducing digs of non-TOIs may be made.

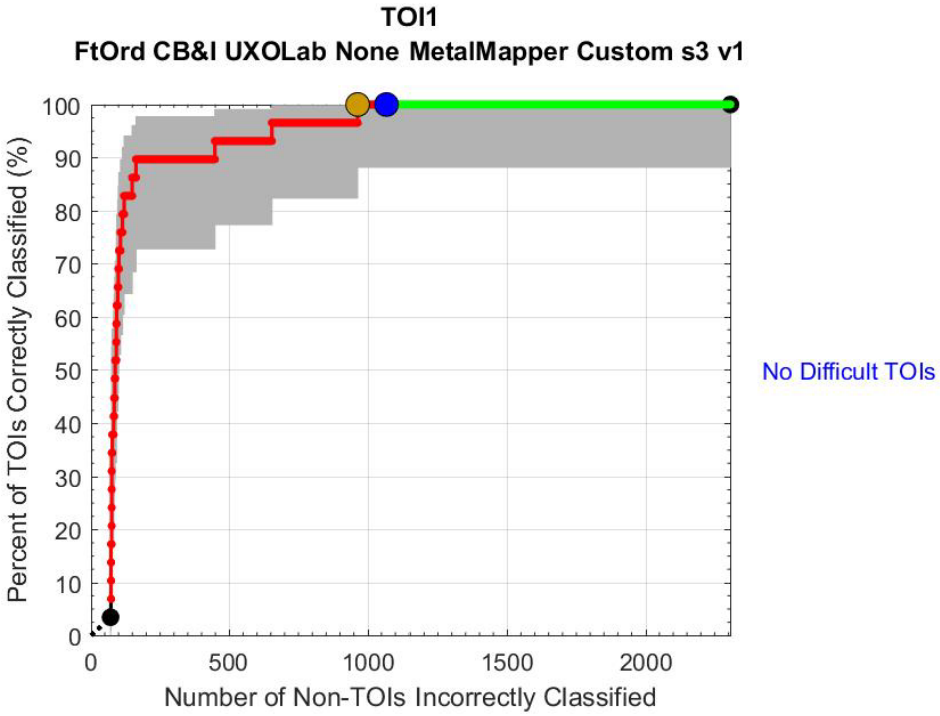


Figure 2-6: ROC Curves Used for Evaluation

The analyst's stop dig point (blue dot) and the plot of the last TOI (orange dot) on the dig list can be compared. The steeper the curve near the origin of the plot, the better the analyst was in finding all the TOIs and reducing the amount of clutter dug. The example shown is the final result from the Fort Ord MM Survey.

Considerable advancements have been made in discrimination technology. Testing of the MM has been primarily focused on cued data collection at test sites using well-known and accepted instruments in mostly controlled conditions for anomaly ID but is now being tested as the primary anomaly detection instrumentation. The technology has been validated at sites with various munitions types and site conditions, and thereby is being transitioned from researchers to production companies as well as testing of dynamic data collection deployment. Concurrently, the MM development continues to increase its robustness and internal QC testing. It is expected that the technology will continue to gain regulator and industry acceptance in the near term.

2.2 ADVANTAGES AND LIMITATIONS OF THE TECHNOLOGY

Current advanced classification survey instruments include the MM, Time-domain Electromagnetic Multi-sensor Towed Array Detection System (TEMTADS), Man Portable Vector (MPV) and the Berkeley UXO Discriminator (BUD). At the time of planning the demonstration, the main advantage of the MM was that it was commercially available, while the others had limited availability primarily as research instruments.

Advantages of the advanced classification instrumentation are as follows:

- They use a multi-transmitter/receiver system so that a target is illuminated from multiple directions simultaneously yielding better detection resolution than EM61s.
- Dynamic data are used for detection and may be used for classification in a single data collection event.
- Flexibility to set window lengths and number of readings for stacking allows for customization of equipment set-up parameters and optimizing the survey based on the expected TOIs at a given depth within an expected anomaly density.
- Cued data are high fidelity and produce high quality and accurate inversions for anomaly classification.
- Library matching tools allow for quick, easy, and reliable classification of anomalies.

Limitations are as follows:

- Dynamic data collection is typically slower and therefore can be more expensive than conventional EM61 surveys.
- Cued data collection requires a previous dynamic survey (either conventional DGM or advanced classification sensor) to detect anomalies, resulting in increased geophysical survey costs (although many times realized in savings of excavation costs).
- The current libraries are incomplete and may require the addition of TOI data.
- The MM is large and cumbersome. The current system at the time of this data collection event was heavy and difficult to maneuver where there are terrain and vegetation issues.
- The MM requires ruggedization.

3.0 PERFORMANCE OBJECTIVES

Performance objectives for the dynamic and cued MM data collection and analysis are provided in **Table 3-1**.

Table 3-1: Performance Objectives

Performance Objective	Metric	Data Required	Success Criteria
Data Collection Objectives			
Instrument Verification Strip(IVS) Repeatability	Location and detection amplitudes are repeatable	Dynamic and cued IVS data	Detection amplitudes are within 25%, Locations are within 0.5 meters (m)
Dynamic Data Full coverage	Across-track line separation Along-line data separation	Dynamic data	90% Across-track separation are within 0.5 m. 100% are within 1.0 m. 95% Along-line data separation are within 15 cm. 100% are within 20 cm.
TOIs Detection	Detection of seed items	Dynamic data	100% of seed items detected.
Cued Data Location	Distance between cued location setup and the inverted location	Cued data	Locations within 40 cm.
Data Analysis Objectives			
Correctly classify TOIs	Identify TOIs and seed items	Cued data Excavation results	100% of seed items correctly classified Correctly classify 75% of small TOIs and 100% of large TOIs for each density region.
Correctly classify Non-TOIs	Eliminate false alarms	Cued data Excavation Results	65% of non-TOIs correctly classified
Minimize “can’t analyze” anomalies	High quality cued data	Cued data	Less than 15% “can’t analyze” anomalies.
Correctly place the stop dig threshold	TOIs above stop dig threshold	Prioritized dig sheet Excavation Results	No large TOIs below threshold. Correctly classify 75% of smaller TOIs. Minimize non-TOIs digs above threshold.
Correct anomaly location	Anomaly locations on dig list are accurate.	Detection, inversion and excavated locations	Detected location and inversion location are within 40 cm. Excavated location is within 40 cm of inversion location.

3.1 OBJECTIVE: IVS REPEATABILITY

The effectiveness of the technology for detection and classification of munitions is dependent on high fidelity data that are defensible and repeatable.

3.1.1 Metric

MM settings and survey parameters are used such that consistent detection amplitudes, misfit values, and inverted locations of IVS seed items are realized.

3.1.2 Data Requirements

MM dynamic and cued data were collected at the IVS before and after each day's production surveying. Detection data were processed and then compared for repeatable amplitudes and locations. Cued data polarizability curves were matched to the library items and to previous results.

3.1.3 Success Criteria

The objectives are met if detection amplitudes are within ±25 percent for dynamic surveys. In addition, misfit values should fall within 10 percent and interpreted locations within 0.5 m of the actual location of the IVS seed items for both cued and dynamic surveys.

3.2 OBJECTIVE: DYNAMIC DATA FULL COVERAGE SURVEY

The detection of all munitions depends on dynamic survey coverage. The coverage both along and across line direction are included in this objective.

3.2.1 Metric

MM settings and survey parameters are used such that consistent detection and location of IVS seed items is realized.

3.2.2 Data Requirements

MM dynamic data are collected with integrated navigation. Data are processed using project procedures determined during IVS data collection. Plan maps are plotted to confirm data cohesiveness. Line to line and along line data points are reviewed for quality and data gaps and the results documented. Data gaps are marked for fill-in data collection.

3.2.3 Success Criteria

The objectives are met if 90 percent across-track separations are within 50 cm and 100 percent are within 1 m. The along-track spacing objective is met if no more than 5 percent of data along line are separated by more than 15 cm and 100 percent is within 20 cm separation.

3.3 OBJECTIVE: TOI DETECTION

The detection of all TOIs is a desired objective.

3.3.1 Metric

MM settings and survey parameters are used such that consistent detection and location of IVS and blind seed items are obtained.

3.3.2 Data Requirements

MM dynamic data are collected with integrated navigation. Data are processed and, using the project selection criteria, IVS and blind seeds are among all selected anomalies.

3.3.3 Success Criteria

The objectives are met if 100 percent of blind seeds are detected and 100 percent IVS seeds are detected and within metrics outlined in the IVS repeatability objective. This metric is to confirm the detection system and the analyst are meeting these standards for known items.

3.4 OBJECTIVE: CUED DATA LOCATION

The detection location (dynamic) of all anomalies are near inverted locations (cued) is a desired objective.

3.4.1 Metric

MM setup on the reacquired location of the detection survey is coincident with the location based on the inversion of the cued data.

3.4.2 Data Requirements

The MM is set up on the reacquired location and cued data are collected. Data were checked in the field using WRT software and the MM is moved to the revised location, if necessary, resulting from the data modeled in the field. Cued data are then collected for classification.

3.4.3 Success Criteria

The objectives are met if 100 percent of the targets' modeled locations are within 40 cm of the center of the MM. Those that are greater than 40 cm will be recollected at the modeled source location. If the offset is still 40 cm, it will be assumed that this second modeled location is due to a second nearby target and the data is considered a success.

3.5 OBJECTIVE: CORRECTLY CLASSIFY TOI

This objective requires the correct classification of all TOIs including seed items detected in the MM data.

3.5.1 Metric

TOI items found during the intrusive investigation are identified as such and were identified for digging.

3.5.2 Data Requirements

The cued MM data are collected at each anomaly detected in the dynamic data, processed, and, using signature library matching and training data, a prioritized dig list is created. The dig list categorizes each anomaly as "high-confidence TOI," "high-confidence non-TOI," and "can't analyze."

3.5.3 Success Criteria

The objective is met when all the TOIs and seed items are identified for intrusive investigation. Any "can't analyze" anomalies will also be included on the dig list. As discussed with ESTCP and the USACE-Sacramento Geophysicist, the success criteria are that 75 percent of smaller TOIs and 100 percent of larger TOIs (155mm projectiles and larger) are correctly classified. The success criteria will be evaluated for each of the high, medium high, medium, and low density areas.

3.6 OBJECTIVE: CORRECTLY CLASSIFY NON-TOI

The detected anomalies that are not TOIs are classified as non-TOIs. This objective shows the effectiveness of the classification system at reducing the number of excavations.

3.6.1 Metric

Only a percentage of non-TOIs classified items are dug and that most non-TOIs items are identified as such and are not identified for digging.

3.6.2 Data Requirements

The cued MM data are collected at each anomaly detected in the dynamic data, processed, and, using signature library matching and training data, a prioritized dig list is created. The dig list categorizes each anomaly as "high-confidence TOI," "high-confidence non-TOI," and "can't analyze."

3.6.3 Success Criteria

The objectives are met if 70 percent of non-TOIs are correctly classified. Additionally, it is anticipated that 65 percent of the non-TOIs are below the dig threshold on the anomaly list.

3.7 OBJECTIVE: MINIMIZE "CAN'T ANALYZE" ANOMALIES

When data can't be analyzed, the anomaly cannot be classified. These anomalies must be dug, increasing the numbers of dig, potentially digging non-TOIs, and reducing the effectiveness of the advanced classification program.

3.7.1 Metric

Only a small number of "can't analyze" anomalies is the metric.

3.7.2 Data Requirements

The cued MM data are collected following best practices at each anomaly to minimize the number of anomalies that can't be analyzed and to maximize the number of anomalies that can be reliably classified.

3.7.3 Success Criteria

The objectives are met if 85 percent of all the anomalies have clean, reliable data leaving 15 percent of cued data classified as "can't analyze."

3.8 OBJECTIVE: CORRECTLY PLACE THE "STOP DIG" THRESHOLD

The "stop dig" threshold is the dividing line between the digs and the no-digs. The objective is that all TOIs, seed items, "can't analyze" anomalies, and validation anomalies are above the stop dig threshold and the non-TOIs are below. This objective shows the effectiveness of the classification system at reducing the number of excavations.

3.8.1 Metric

All TOIs, seed items, "can't analyze," and validation check anomalies are dug and that most non-TOI items are identified as such and are not identified for digging.

3.8.2 Data Requirements

The dig list including classification results and excavation results are compared and a ROC curve is prepared.

3.8.3 Success Criteria

The objectives are met if the ROC curve is steep and 65 percent of non-TOIs are below the stop dig threshold and 75 percent of smaller TOIs and 100 percent of larger TOIs are above the stop dig threshold.

3.9 OBJECTIVE: CORRECT ANOMALY LOCATION

The modeled location from the cued data accurately depicts the location (laterally and vertically) of the anomaly source.

3.9.1 Metric

The metric is the offset between the inverted anomaly location and the excavated location.

3.9.2 Data Requirements

The dig list x, y coordinates (inversion results) and the offset between the dig list locations and recovered locations are compared.

3.9.3 Success Criteria

The objectives are met if 90 percent of the two location offsets are within 40 cm and the depths are within 10 cm.

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4.0 SITE DESCRIPTION

Fort Ord is a closed installation that has an ongoing munitions response program managed by the USACE, Sacramento District on behalf of the Fort Ord BRAC Office. Units 11 and 12 in the Impact Area MRA at the former Fort Ord (**Figure 1-1**) cover approximately 476 acres. The complete area has had full coverage surface MEC remediation, plus DGM has been performed using a vehicle towed array of three (Geonics Limited) TDEM High Sensitivity metal detectors (EM61-MK2) over the complete site, except small areas where terrain and a stand of oak trees precluded data collection.

4.1 SITE SELECTION

There are a number of advantages for Units 11 and 12 for purposes of a live site demonstration:

1. Surface MEC remediation and DGM have been completed.
2. A variety of MEC types were found on the surface and a similar variety is expected in the subsurface.
3. The site mostly presents challenging conditions in terms of high metallic density but also includes areas of moderate density that will allow evaluation of a range of conditions.
4. The selected grids have rolling terrain and no canopy interfering with GPS.
5. The demonstration addresses a real decision faced by the owner regarding future subsurface clearance.
6. CB&I geophysicists have been performing DGM at the former Fort Ord since 2006 using an array of EM61s over 2,400 acres and have gained considerable site specific experience.
7. CB&I has in place approved procedures and a comprehensive Accident Prevention Plan governing MEC investigations.
8. CB&I has available on-site support facilities and UXO personnel.

4.2 SITE HISTORY

Fort Ord was established in 1917 as a training and staging facility for infantry troops. Between 1947 and 1975, Fort Ord functioned as a basic training center. After 1975, the 7th Infantry Division was based at Fort Ord. In 1991, Fort Ord was slated for closure and by 1993 the majority of the soldiers were reassigned to other Army posts. Fort Ord was officially closed in September 1994. There are no active Army units stationed at the former Fort Ord.

In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate MEC at the former Fort Ord. Following completion of the *Track 3 Impact Area MRA Munitions Response Remedial Investigation/Feasibility Study, Former Fort Ord, California* (MACTEC, 2007), the Army prepared the Track 3 ROD (Army, 2008), which is the decision document presenting the selected remedial action for MEC in the Impact Area MRA.

Remedial action for Units 11 and 12 is described in the *Final, MRS-BLM Units 4, 11, and 12, Munitions and Explosives of Concern, Remedial Action Report, Former Fort Ord, California* (Gilbane, 2014). Vegetation was mechanically cleared between May 2011 and January 2012. Surface removal was completed between August 2011 and May 2012, and DGM was completed between January and December 2012. A prescribed burn will be required in the future to comply with the ROD.

4.3 SITE GEOLOGY

The former Fort Ord is within the Coast Ranges Geomorphic Province. Outcrops and near surface rocks are typical in the south with overlying deposits thickening to the north.

Fort Ord is underlain by the following units:

- Mesozoic granitic and metamorphic rocks;
- Miocene marine sedimentary rocks of the Monterey Formation; and
- Upper Miocene to lower Pliocene marine sandstone of the Santa Margarita Formation.

They are overlain by younger sediments, which may include:

- Plio-Pleistocene alluvial fan, lake, and fluvial deposits of the Paso Robles Formation;
- Pleistocene eolian and fluvial sands of the Aromas Sand;
- Pleistocene to Holocene valley fill deposits consisting of poorly consolidated gravel, sand, silt, and clay; and
- Pleistocene and Holocene dune sands:
  - Recent beach sand; and
  - Recent alluvium.

The Santa Margarita Formation potentially poses the most geophysically-challenging geology because the sandstone has an iron rich matrix, which may be seen as magnetic concretions. However, this did not have a significant impact on the EM61 surveys and CB&I did not observe a significant impact on the MM surveys.

4.4 MUNITIONS CONTAMINATION

Since 1917, portions of former Fort Ord were used by cavalry, field artillery, and infantry units for maneuvers, target ranges, and other purposes. From 1947 to 1974, Fort Ord was a basic training center. After 1975, the 7th Infantry Division occupied Fort Ord. Military munitions were fired and used on the facility, including artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, land mines, pyrotechnics, bombs, and demolition materials.

Surface sweeps identified MEC items throughout Units 11 and 12, including 37mm, 40mm, 57mm, 60mm, 75mm, 90mm, 105mm, and 155mm projectiles. The results of the DGM indicate that a variety of MEC items may be present in the subsurface. The BRAC Office is interested in determining if advanced classification methods can be used to locate large MEC items such as 155mm projectiles, as well as sensitive munitions such as 40mm projectiles. Surface Sweep Results are included in **Appendix F**.

5.0 TEST DESIGN

The test design and implementation are outlined below.

5.1 CONCEPTUAL EXPERIMENTAL DESIGN

Given the wide variety of possible munitions and that the area is considered to have a very high anomaly density, CB&I sought to demonstrate whether large munitions, such as 155mm projectiles, can be confidently classified in a challenging environment such as this, which has a high metallic background. In order to determine if this was possible, areas of relatively high, medium-high, medium, and low anomaly densities were surveyed in both dynamic and cued mode for detection and classification respectively.

The study area consists of 5 acres and is shown in **Figure 1-2**. The low and medium density areas are located in Unit 12 and were labeled 12A and 12B, respectively. The high density area consists of two locations in Unit 11, 11A and 11B. All four areas were chosen based on the results from previous EM61 surveys and their proximity to MEC items found during previous surface removal operations. One grid from each location (shown in **Figure 1-3**) was chosen for a 100 percent investigation of all MM targets detected during the dynamic survey. Intrusive investigation of targets in the remaining grids was limited to targets with a high confidence of being TOI based on BTG inversion results obtained from the dynamic MM data. In addition, targets were selected from outside the study area from anomalies present in the existing EM61 data.

Dynamic data were collected with the MM deployed on a skid behind a tractor. This was similar to DGM surveys conducted by CB&I at Fort Ord, where EM61 sensors had been mounted behind a tow vehicle. These data were used for detecting anomalies.

Cued data were collected with the MM stationary at 2,653 anomalies detected during the dynamic data collection event, plus 150 anomalies selected from EM61 data. These data were used for classification of each anomaly.

Although the metric for success was to find 155mm buried to 60 cm where there is clutter, CB&I attempted to classify all TOIs correctly and thereby show that a reduction of the number of unnecessary digs of non-TOIs is possible.

The high, medium, and low anomaly density grids were analyzed in terms of classification and excavation results concluding with the evaluation of applicability of the advanced classification technology for use as a basis for future treatability studies.

A total of 2,803 targets were cued with the MM and intrusively investigated, including:

- 2,125 targets in the four 100 by 100 foot (ft) grids (one grid in each of the low, medium, medium-high, and high density grids).
- 528 higher-likelihood TOIs scattered throughout the complete five acres outside the four 100 by 100 ft grids.

- 150 anomalies selected from EM61 data were investigated to evaluate whether the EM61 data were of high enough quality to select anomalies and collect cued data that would result in reliable inversions.

The EM61 targets were selected using a threshold of 146 millivolts (mV) on channel 2 based on the published Naval Research Laboratory (NRL) response value for a 155mm in the least favorable orientation (horizontal) combined with a visual inspection of the anomaly footprint and previous surface clearance results.

The schedule is depicted in **Table 5-1**. The steps for the demonstration were as follows:

- Site Preparation
  - Surface clearance
  - Vegetation clearance
  - Plant seeds
- IVS survey, testing, and library data collection
- Dynamic Data Collection (detection survey)
  - Collect five acres of data
- Data Processing
  - Leveling data
  - Anomaly detection
- Static Data Collection (cued survey)
- Intrusive Investigation
  - Excavations and documentation
  - QC of excavations
- Analysis and Classification
  - Data inversions
  - Classifying and prioritizing anomalies

Table 5-1: Schedule

	Oct '14				Nov '14				Dec '14				Jan '15				Feb '15				Mar '15				May '16				June '16			
Site Preparation																																
IVS Testing																																
Dynamic Data Collection																																
Static (Cued) Data Collection																																
Data Processing																																
Analysis & Classification																																
Intrusive Investigation																																

Note: a reclassification was undertaken in May of 2016 to incorporate 20mm projectiles into the TOI lists at the request of USACE.

5.2 SITE PREPARATION

Prior to CB&I's previous DGM, the following site preparation activities were performed:

- Consolidation and removal of man-made structures and material;
- Debris, including general trash, metallic debris, and telephone poles, were removed;
- Targets previously used by the Army for live-fire training were removed; and,
- Vegetation within the interior of these units was mechanically cleared.

5.2.1 Blind Seeds

CB&I seeded the site using small, medium, and large industry standard objects (ISOs) in the low and medium density grids and large ISOs in the high density grids. Inert items including 37mm, 40mm, 57mm, 75mm, and 155mm projectiles were included among the blind seeds. There were two seed items per 100 by 100 ft sub grid. One seed item was a CB&I QC seed and the other, an ESTCP quality assurance (QA) seed. Each of the grids 11A, 11B, 12A, and 12B contained one 155mm projectile, with two as QC seeds and two as QA seeds. With the exception of two seeds used for calibration purposes, the QC seeds were blind to the both the CB&I and BTG data analysis personnel. QA seeds were installed by CB&I under the guidance of the USACE QA geophysicist. These were blind to the CB&I QC geophysicist, the CB&I data analysts, and BTG.

The seeds (including 155mm and smaller TOIs) were placed at depths to demonstrate detection and classification success to a depth of 60 cm. Tests were also carried out to determine if 155mm projectiles could be confidently classified at depths approaching 120 cm in areas of clutter. However, training pit data results showed poor signal to noise ratios at depths approaching 120 cm. In addition, digging by hand in order to center seed items at depths greater than 90 cm proved difficult, so the deepest seed was 63 cm, as shown on **Figure 5-1**.

In addition to noting the seed item, the depth and location were documented to within 2 cm using a GPS and the azimuth and inclination was recorded.

All seeds were blind to the data processors. Half of the seeds were considered CB&I QC seeds and half were considered ESTCP QA seeds. The QC blind seed locations, depths, orientations, and items were reported to the CB&I QC geophysicist and ESTCP representative. The QA blind seed information was divulged to ESTCP and USACE only.

5.2.2 Background Locations

Given the large quantity of metallic items in the ground, especially in the Unit 11 grids, background locations were created adjacent to each grid by mechanically removing the upper foot of soil under the supervision of UXO support personnel. This was performed adjacent to each of the four grids selected for investigation.

Figure 5-1: Example of a Blind Seed Item and Recorded Information

5.3 SYSTEM SPECIFICATION

5.3.1 Antenna Platform

The MM's three transmitting loops are positioned as follows:

- X transmitter (horizontal axis clockwise from Y): 0.98m by 0.98m, centered 0.56m above the origin.
- Y transmitter (horizontal axis in direction of travel): 1m by 1m, centered 0.56m above the origin.

- Z transmitter (vertical axis): 1m x 1m, center is ~15 cm above ground level. The center of the Z loop is taken to be the local origin of coordinates for the cart.

The MM's three transmitters and seven receivers are mounted as shown in **Figure 5-2**.

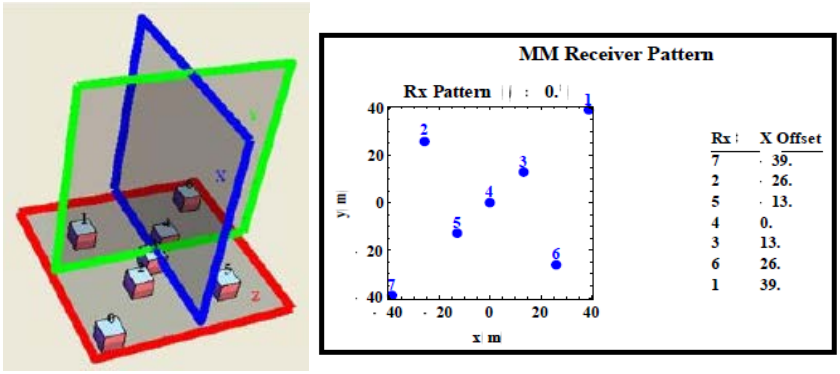

Figure 5-2: MM Transmitter Coils and Receiver Cubes

5.3.2 Signals and Timing

MM data are collected in time blocks with fixed number of transmitter cycles where the period and the repeat factor are operator selectable. The MM also averages an operator-specified number of stacks and the data are saved.

The decay transients that are received during the off times are stacked (averaged) and marked as positive and negative half cycles. The decays are stacked and the decays in that block are averaged with the other acquisition blocks. The data are saved as a *data point*.

The MM averages GPS readings while the electromagnetic (EM) data are being collected. If no GPS readings are collected during that period, the most recent GPS position and the platform attitude angles (magnetic heading, pitch, and roll) data are used. GPS data were collected at 10 points per second and the coordinates stored with the data are either the most recent fix, or the average of fixes received during the data point collection interval. The EM3DAcquire software could not make use of GLONASS National Marine Electronics Association strings, which triggered constant GPS quality warnings, so that feature was disabled in the GPS unit.

Transmitter switching and receiver sampling is controlled by hardware that is programmable. The data are acquired in *double-buffered* mode, that is, the data samples from a previously collected data point are processed and stored concurrently with acquisition of the next data point. If computer processing cannot maintain pace, one or more succeeding data points are skipped. For normal surveying activities, data points are rarely skipped.

Data collection and internal processing is the same for cued and dynamic modes within the data logging software. In cued mode, the MM collects a single data point and then terminates acquisition. The data are stored as a single data point in the output data file. In dynamic mode, data collection of a new data point is concurrent with completion of the previous data point yielding continuous data until the operator stops the data collection. All continuous data are stored in a single output file.

Decay transients in a data point are divided into logarithmically spaced time gates. Received signals are sampled at a rate of 250 kilo-samples per second (KS/s). After initiating turn-off of the transmitter, the system initiates a time delay (e.g., 100 microseconds [µs]) determined by the *HoldOff* parameter. Responses within a specific time gate are averaged and become the value of the signal for that time gate. The widths of the gates are specified by the *GateWidth* parameter. Gate width is specified as a percentage. For a gate width of 10 percent, for example, the width of a gate at 600 µs would be 60 µs. A gate is minimally one data sample.

5.4 CALIBRATION ACTIVITIES

In order to confirm the proper function of the MM in the configurations used for this project, initial tests were conducted at an IVS and test pit, with ongoing tests carried out daily at the IVS.

5.4.1 Instrument Verification Strip and Training Pit

An existing IVS in Burn Unit 12 was repurposed for use with the MM in dynamic and cued modes. The existing small, schedule 40 ISOs were removed and items relevant to the advanced classification study were buried for use with QC of the MM deployment configuration. A training pit was established for collecting cued data on items expected in the grids that are not in the current signature library used for matching during data analysis. This pit was an open hole, which the MM was held above with the test items placed at various depths and orientations. Details for the IVS are provided in **Table 5-2**.

Table 5-2: Details of the Instrument Verification Strip

ID	Item	Burial Depth (cm)	Orientation
1	Small ISO (schedule 80)	5	Horizontal
2	Medium ISO	26	Horizontal
3	Medium ISO	65	Horizontal
4	Large ISO	75	Horizontal
5	Small ISO (schedule 80)	9	Vertical
6	Medium ISO	91	Vertical
7	Large ISO	100	Vertical
8	Large ISO	125	Vertical

5.4.2 IVS Activities

The IVS was used for daily function checks of the MM and GPS. The IVS was surveyed prior to the first data collection event of each day, except December 30, 2014, when a small set of targets were collected prior to the IVS due to an equipment failure the previous day. Additionally, IVS data were collected after the last data event of each day except for December 29, 2014, because of the previously mention equipment issue. Comparisons of these responses to the expected responses and detection locations to the item's known locations for each ISO were used to verify the equipment's functionality. Due the large depth to size ratios of IVS items 3, 6, 7, and 8, their polarizabilities could not be regularly recovered. Therefore, they were not used in determining functionality of the MM instrument.

The Cued IVS activity procedures were as follows:

- Perform internal MM tests
- Acquire static background data at a designated “background” test location (a metal-free area near the IVS)
- Acquisition parameters set for static (Cued ID) data acquisition
- Acquire static data for each of the items in the IVS
- Collect static RTK GPS at a control point established near the IVS to confirm the GPS is set up correctly

The Dynamic IVS activity procedures were as follows:

- Perform internal MM tests
- Acquire static background data at a designated “background” test location (a metal-free area near the IVS).
- Acquisition parameters set for dynamic (Dynamic ID) data acquisition.
- Traverse the IVS in two opposing line directions, with offsets to the East and West for a total of three passes.
- Collect static RTK GPS at a control point established near the IVS to confirm the GPS is set up correctly.

At the training pit, potential TOI responses were measured at a variety of depths and orientations. These data were used to determine detection thresholds, provide training data, and to provide responses for potential TOIs that are missing from the library of curves. For TOIs of particular interest, i.e., 155mm and 40mm projectiles, additional surface frag was included to test the ability to recovery TOIs in clutter, and the viability of extended time gates as shown on **Figure 5-3**. Cued test pit measurements are indicated in **Table 5-3,** and dynamic measurements made with multiple lateral offsets in **Table 5-4.**

Figure 5-3: Example of a Test Pit Measurement of a 40mm Projectile at 8 inches Depth and Frag Near to the Surface

Table 5-3: Cued TOI Test Pit Measurements

Inert Item	Depth (cm)	Orientation
Small ISO (schedule 80)	4, 5, 8, 11	vertical, horizontal
Medium ISO	16,17,29	vertical, horizontal
Large ISO	30, 50, 58, 75	vertical, horizontal
2.36 inch rocket	32, 49, 62, 75	vertical, horizontal, nose up/down
T-Bar Fuze	4, 9	vertical
60 mm mortar	13, 15, 16, 24,25,29	vertical, horizontal, nose up/down
81 mm mortar (2 models)	30, 33, 48, 60, 61, 72, 73	vertical, horizontal
40mm projectile	10,11,14,16, 30	vertical, horizontal, nose up/down
57mm projectile	12, 13, 25	vertical, horizontal
75mm projectile	32, 55, 63, 79	vertical, horizontal
155mm projectile (2 models)	51, 52, 58, 62	vertical, horizontal
Stokes Mortar – 3 inch	29,32,49,58,75	vertical, horizontal

Table 5-4: Dynamic TOI Test Pit Measurements

Inert Item	Depth (cm)	Orientation
40mm projectile	10, 11, 16, 30	Vertical, horizontal, nose up/down
155mm projectile (2 models)	51, 52, 58, 62	Vertical, horizontal

5.5 DATA COLLECTION

Data collection procedures are described below.

5.5.1 Scale

CB&I collected approximately five acres of dynamic MM data in twenty 100 ft by 100 ft grids, which spanned high, medium-high, medium, and low density areas.

Prior to data collection, three different sets of time gates with maximum values of 22.5 milliseconds (ms), 8.3 ms, and 2.7 ms were tested in both the IVS and portions of low and high density. Analysis by BTG indicated that using a longer time gate (22.5 ms) provided better detection capabilities without affecting dynamic data quality.

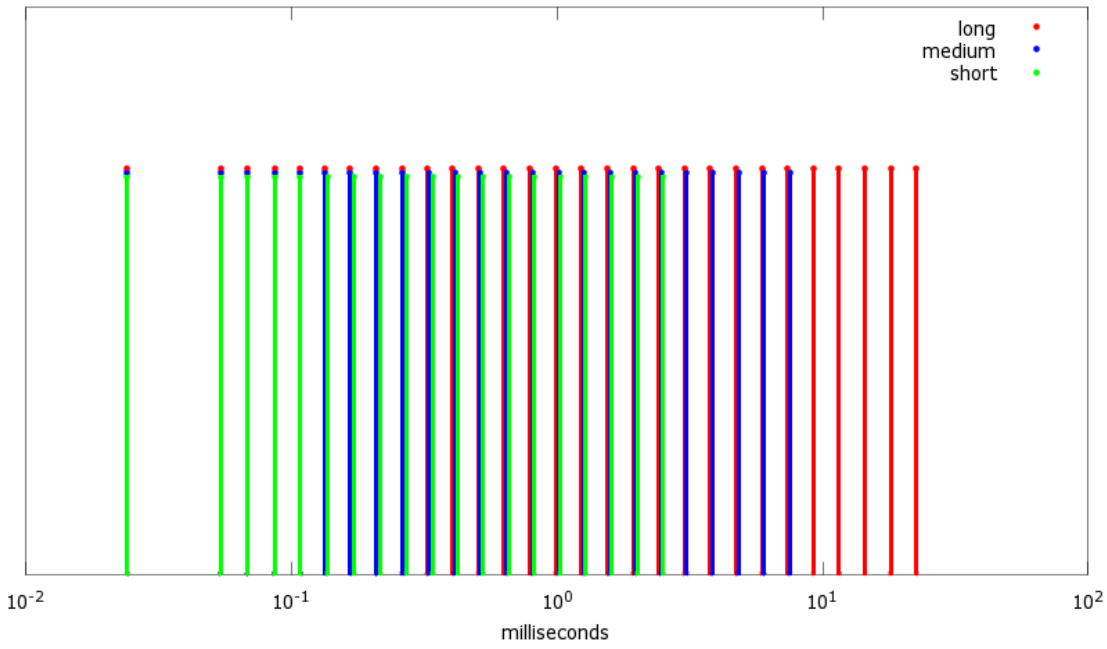

Figure 5-4: Time Gates Evaluated for Use in Dynamic Data Collection

A total of 2,653 anomalies identified in the dynamic data plus 150 targets identified from EM 61 data were investigated with the MM in cued mode. These data were used for classification into TOI, non-TOI, and "can't analyze" groups. Cued data were acquired over 52 time gates ranging from 0.11 ms to 23.75 ms with number stacks set to 10. Dynamic data were acquired over 29 time gates ranging from 0.024 ms to 22.5 ms, but only those between 0.208 ms and 22.5 ms were used for analysis due to inherent noise in the earlier time gates.

5.5.2 Sample Density

The dynamic survey mode consisted of complete coverage within areas 11A, 11B, 12A, and 12B. Data was to be collected along parallel transects with 0.75 m nominal line spacing; however, some transects deviated from a straight line path due to obstructions. Sample rate and survey speed were slow enough to ensure down-line spacing of less than 15 cm. Survey positions were recorded and logged using an RTK GPS.

The cued mode data collection consisted of surveying static data over a list of anomalies identified from the dynamic survey. Cued mode data were collected over each identified anomaly, with measurements repeated as necessary due to offsets of the sensor relative to the anomaly source or other data quality issues.

5.5.3 Quality Control

The measurement quality objectives (MQOs) along with the testing frequencies, acceptance criteria, failure response, and results are presented in **Table 5-5** below.

Table 5-5: Quality Metrics Summary

Measurement Quality Objective	Frequency	Acceptance Criteria	Failure Response	Results
Verify correct assembly	Once following assembly	As specified in manufacturer's manual	Make necessary adjustments, and re-verify.	Two equipment failures were identified that required manufacturer maintenance prior to data collection.
Initial IVS background measurement (five background measurements, one centered at the flag and one offset 40 cm in each cardinal direction)	Once during initial system IVS test	All decay amplitudes lower than project threshold (threshold dependent upon soil response). Match metric > 0.9 each of the five sets of inverted polarizabilities if test item is used.	Reject/ replace background location	The initial background measurement was analyzed by BTG and was determined to be sufficient. Note that because UXOLab was the primary data analysis tool, the UX-Analyze Match metric wasn't used.
Initial derived polarizabilities accuracy (IVS)	Once during initial system IVS test	Library Match metric ≥ 0.9 for each set of inverted polarizabilities.	Change baseline fit metric or, if it is deemed that the site specific conditions are the cause, verify using the training pit and add to the match library as needed.	Site specific items from the training pit were used for library matching. Note that because UXOLab was the primary data analysis tool, UX-Analyze Match metric wasn't used.
Derived target position accuracy (IVS)	Once during initial system IVS test	All IVS item fit locations within 0.4 m of ground truth locations	Verify GPS readings at a benchmark, re-survey IVS seed item location.	Inverted initial IVS items were within 0.4 m of ground truth. Item 5 had to be replaced at 9 cm depth to avoid being moved by tow vehicle
Ongoing IVS background measurements	Twice daily as part of IVS testing	All decay amplitudes lower than project threshold.	Rejection of background measurement (unless system failure).	Background measurements were collected twice daily as part of the daily IVS tests. Measurements were analyzed by BTG and those that did not meet this requirement were rejected.
Ongoing derived polarizabilities precision (IVS)	Twice daily as part of IVS testing	Library Match to initial polarizabilities metric ≥ 0.9 for each set of three polarizabilities.	Re-test; verify polarizability on QC seed items.	Note that because UXOLab was the primary data analysis tool, UX-Analyze Match metric wasn't used. A threshold of a 10% misfit was used as a reference in IVSZilla instead.
Ongoing derived target position precision (IVS)	Twice daily as part of IVS testing	All IVS item fit locations within 0.4 m of average of derived fit locations	Verify GPS QC tests; verify locations of QC seeds.	All IVS item fit locations were within 0.4 m of ground truth during dynamic tests.

Table 5-5: Quality Metrics Summary (Continued)

Measurement Quality Objective	Frequency	Acceptance Criteria	Failure Response	Results
Initial measurement of production area background locations (five background measurements one centered at the flag and one offset 40 cm in each cardinal direction)	Once per background location	All decay amplitudes lower than project threshold (threshold dependent upon soil response). Match metric > 0.9 each of the five sets of inverted polarizabilities if test item is used.	Reject background location and find alternate.	Due to the difficulty in finding suitable background locations that meet this metric, background locations in each of the survey locations were intrusively cleared and used for production data. These were then verified by BTG.
Ongoing production area background measurements	Background data collected nominally every two hours during production (minimum)	All decay amplitudes with qualitative agreement with prior measurements	Background measurement rejected and alternate used.	Backgrounds were collected approximately every two hours, and when survey areas were changed. Spikes in background data were corrected with despike utility in UXOLab.
Confirm all background measurements are valid	Evaluated for each background measurement	All decay amplitudes lower than project threshold with qualitative agreement with initial measurements	Background measurement rejected and removed from active background measurements.	Survey background measurements were analyzed by BTG. One background from 12/30/14 was not used.
Confirm inversion model supports classification	Evaluated for all models derived from a measurement (i.e., single item and multi-item models)	Derived model response must fit the observed data with a fit coherence ≥ 0.8	Review all available information. Make decision. If necessary, filter polarizabilities and/or adjust time gates upon which decisions are made.	This metric was not available in UXOLab, and not used. Models with features that did not match the observed data were rejected during the initial analysis using UXOLab and were not used for final classification.
Confirm inversion model supports classification	Evaluated for derived target	Fit location estimate of item ≤ 0.4 m from center of sensor	If no target within 0.4 m radius using multi-solver inversion, classify as “inconclusive.”	Models that were outside of the 0.4 m radius were rejected and not used for final classification.
Confirm inversion model supports classification	Evaluated for all seeds	100% of predicted seed (x,y) ≤ 0.4 m and (z) ≤ 0.1 m positions from known position (x,y,z).	Evaluate seed locations	100% of recovered seeds had predicted (x,y) ≤ 0.4 m from ground truth. Four seeds missed the predicted depth (z) ≤ 0.1 m metric.
Confirm reacquisition GPS precision	daily	Benchmark positions repeatable to within 10 cm	Make adjustments, and re-verify.	GPS benchmark locations were measured twice per day and were all repeatable within 10 cm.

Table 5-5: Quality Metrics Summary (Continued)

Measurement Quality Objective	Frequency	Acceptance Criteria	Failure Response	Results
Confirm derived features match ground truth	Evaluated for all recovered items	100% of recovered (excluding inconclusive category) item positions ≤ 0.4 m from predicted position (x,y).	Verify GPS tests.	GPS tests were verified for targets with predicted positions offset greater than 40 cm from the recovered dig items.
Confirm derived features match ground truth	Evaluated for all recovered items	100% of recovered object shape estimates (excluding inconclusive category) qualitatively match predicted shape.	Continue excavation based on items recovered.	Predicted size and depth were compared to dig results during dig operations. Excavations that did not match predicted size and shape were re-checked in the field.
Classification validation	Evaluated for all recovered items	100% of predicted non-TOIs are correctly characterized	Continue excavation based on items recovered.	The overall results are presented in Section 7.6. Note that the results were not available during dig operations. However, dig locations were checked following excavation.

5.5.4 Measurement Quality Objectives

Exceptions to the MQOs listed in **Table 5-5** are described below.

5.5.5 Blind Seeds

Four of the recovered blind seeds had predicted depths more than 0.1 m from ground truth, but all were within 0.15 m. Two of these seeds were 155mm Illumination rounds with predicted depths within 11 cm of ground truth, still relatively small compared to item dimensions. All four of these seeds had L123 misfit values less than 0.4, which was considered a good match. In addition, the size estimates were correct.

5.5.6 Dynamic IVS misfit results

Misfit values were calculated with the IVSZilla tool in UXOLab, using a misfit threshold of 10 percent that was suggested by BTG analysts. Four tests for seed item 1 had misfit values over 10 percent with a median value of 18.47 percent. Misfit values for seed item 2 were within 10 percent on all tests. Seven tests for seed item 3 had misfit values over 10 percent with a median value of 12.60 percent on those tests that failed. Seed item 4 had one misfit value of 41.62 percent while the remaining misfit values were within 10 percent. Eight tests for seed item 5 had misfit values over 10 percent with a median value of 16.87 percent on those tests that failed. Dynamic IVS misfit percentages are shown in **Figure 5-5**.

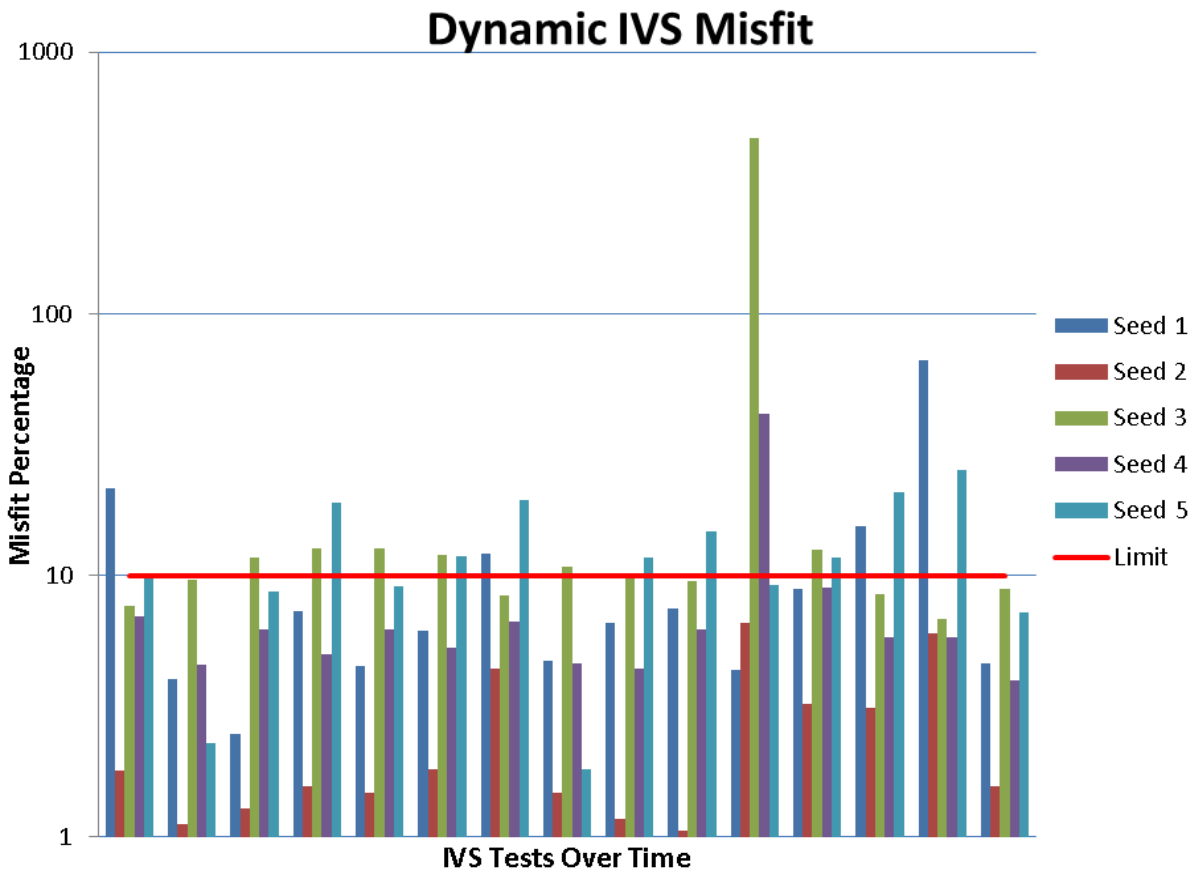

Figure 5-5: Misfit Percentages for Dynamic IVS Tests

5.5.7 Cued IVS misfit results

Misfit values for seed item 1 were within 10 percent on all cued data tests. Seed item 2 had one test with a misfit value of 116.96 percent while the remaining were within 10 percent. Seed item 3 had 27 tests over 10 percent with a median misfit value of 16.24 percent. Seed item 4 had misfit values over 10 percent four times with a median misfit value of 11.7 percent on those tests that failed. Seed item 5 had one misfit value of 14.15 percent while the remaining values were within 10 percent.

5.5.8 Derived IVS Item Positions

Derived positions were within the 0.4 m objective for all dynamic tests. However, failures occurred on eight occasions for seed 3, and one occasion for seed 4 during cued tests. These results are presented in Section 7.1 along with additional IVS metrics as part the performance objectives.

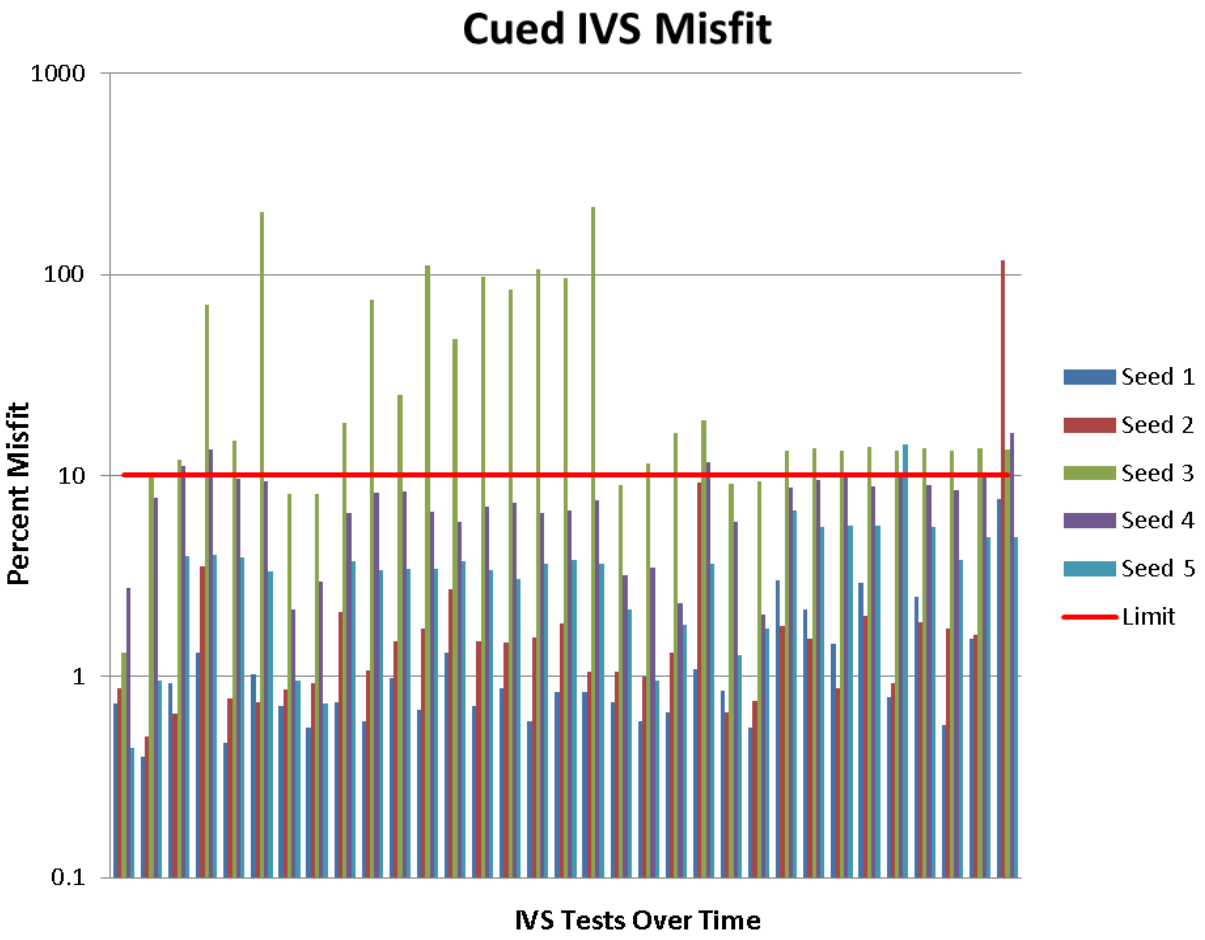

Figure 5-6: Misfit Percentages for Cued IVS Tests

5.5.9 Background Measurement Validity

Background measurements were evaluated qualitively by BTG analysts during data collection. A single background measurement on December 30, 2014, was deemed necessary for removal, shown in **Figure 5-7** along with other background measurements made at the same location.

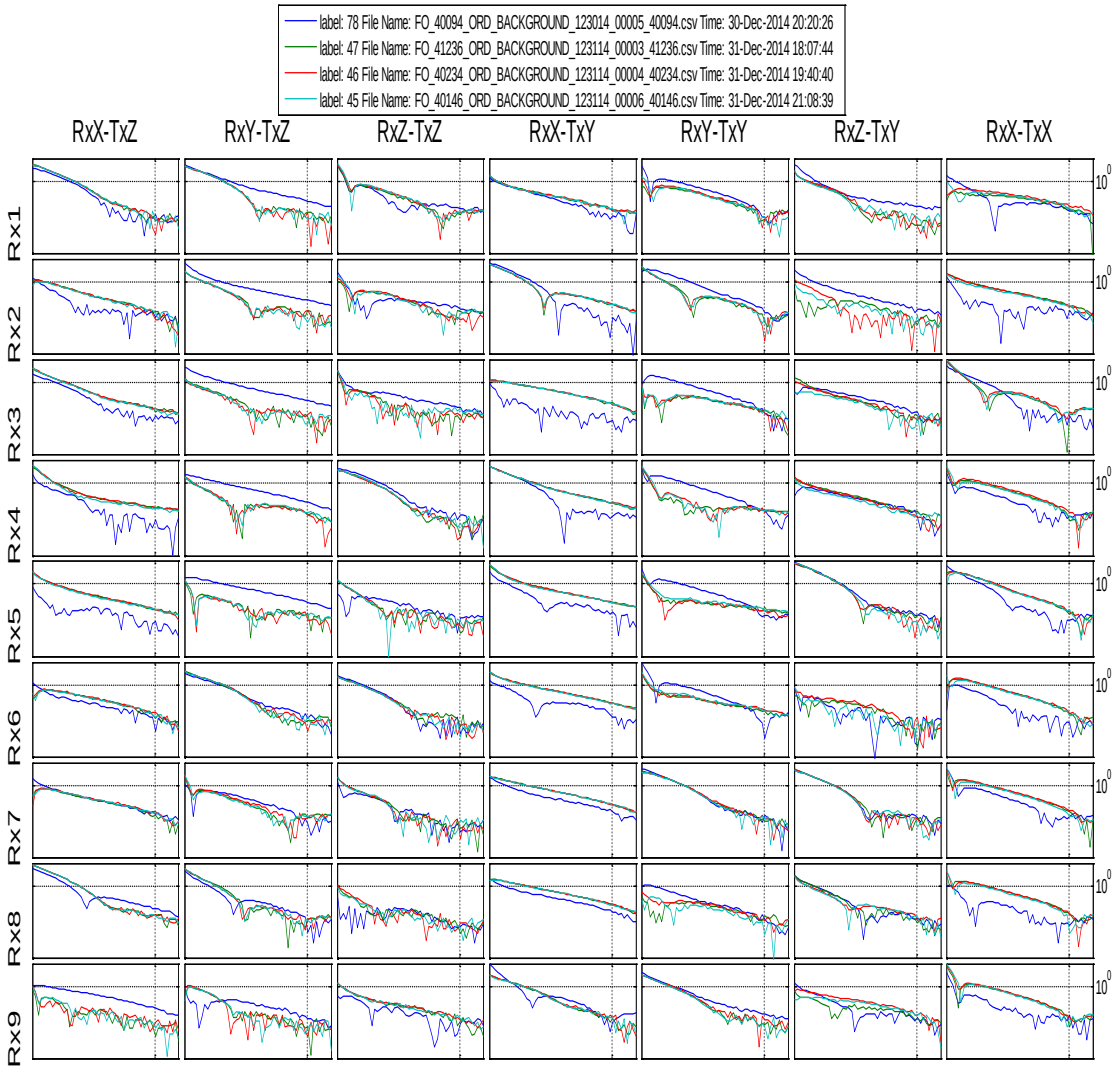

Figure 5-7: Example of Rejected Background Measurement (blue) from 12/30/2014

5.5.10 Data Handling

The raw data from the MM was copied from the field computer after each day of data collection and archived. The raw binary .TEM files were converted to .CSV files and processed in UXOLab. Processed data and targets were made available on BTG's file transfer protocol (FTP) site. Final MM databases and processing projects were archived in UXOLab's .MAT format.

The MM acquisition software has a fixed convention for assigning a unique name to each file. CB&I used "Ord" as the prefix, and the acquisition software appends a 5-character number to the filename suffix to form a unique name for the file (e.g., Ord_11A_CUED_121914_00015.tem). The numbering was sequential for dynamic data files, while for cued data, target numbers for cued data were inserted in the TEM file when the operator selected a target for acquisition in EM3Dacquire. In any case where the numbering did not increment properly, target positions were used by the data analyst to assign corrected target numbers to the processed data.

Dynamic and cued data were named based on the grid location and the date of data collection. If repeated measurements from a single anomaly are required, the file number was updated, but the same Target ID continued to be used. Such repeat measurements were noted in the data tracking spreadsheet and daily field notes.

Each data acquisition file name was digitally documented using a data tracking spreadsheet that was updated each day of data collection. The final version of this tracking spreadsheet is "Ord_file_tracking_030415.xlsx".

The data were archived to the CB&I FTP site http://ftp.shawgrp.com and a private BTG FTP site daily so that ESTCP had easy access to the most current data. Final data were provided to ESTCP and the USACE, Sacramento district via external hard drive. Data were organized by type of data, grid block location if applicable, and date collected. The folder structure follows:

/ESTCP_deliver/TEM/
DYNAMIC/
11A_GRID/
112514/
Contains raw TEM files and converted CSV files for 11/25/14

/ESTCP_deliver/TEM/
Cued/
11A_GRID/
121814/
Contains raw TEM files and converted CSV files for 12/18/14

/ESTCP_deliver/TEM/
IVS/
111814_IVS/
Contains raw TEM files and converted CSV files for AM and PM IVS runs on 11/18/14

The cued data folder also contains "11_CUED_ADDITIONAL" targets, selected in areas adjacent to the 11A and 11B grids, where cued data were collected on possible large TOIs selected from EM61 data. Cued data in grid 11B collected on December 4 and 5, 2014, had errors with target naming embedded in the TEM files. These files remain unchanged, but the target names were corrected in the corresponding CSV files.

Target lists were also archived on the ftp.shawgrp.com and BTG FTP servers, with the following folder structure:

/ESTCP_deliver/TARGETS/
ALL/
Contains target lists by area, picked from dynamic MM data

/ESTCP_deliver/TARGETS/

DIG/

Contains target lists of anomalies that were intrusively investigate, separated by area

Files with the TOIs label contain targets for areas where high confidence TOIs were investigated by dig teams, while the remaining files contain targets from the four grids where all anomalies were investigated. As with the TEM data, the "11_Additional" targets refer to those selected from EM61 data in areas adjacent to the 11A and 11B grids.

All intrusive results were entered in handheld field data loggers and were imported into the project database using ShawMec, CB&I's field data management software. These were then transferred to the Fort Ord Master database.

5.6 VALIDATION

All the anomalies in the four subgrids selected for BRAC's treatability study were excavated. An additional 150 targets in Unit 11 were selected from EM61 data for investigation with the MM. All 150 of these anomalies were dug as well. Each item encountered was identified, photographed, its depth measured, its location determined using cm-level GPS, and the item removed if possible. ESTCP's Intrusive Investigation Data Collection Instructions were followed in accordance with **Appendix D**.

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6.0 DATA ANALYSIS AND PRODUCTS

6.1 PREPROCESSING

Raw MM data were collected and stored as .TEM files. Pre-processing of the raw .TEM files included correcting for background values, and converting the points from the geographic coordinate system used for collection to the Universal Transverse Mercator (UTM) Zone 10N coordinate system used for processing. The resulting data were exported to CSV files for import into UXOLab. During this import process, dynamic data were corrected for a GPS lag of 0.25 seconds and IMU lag of 0.04 seconds.

Since the MM is a multi-static sensor, each component of each receiver cube was filtered and leveled individually. Dynamic data were leveled using a de-trend function with a window length of 20 m. Cued data had any non-physical spikes removed with a custom de-spike tool in UXOLab shown in **Figure 6-1**, before background corrections were applied based on the nearest background measurement in time.

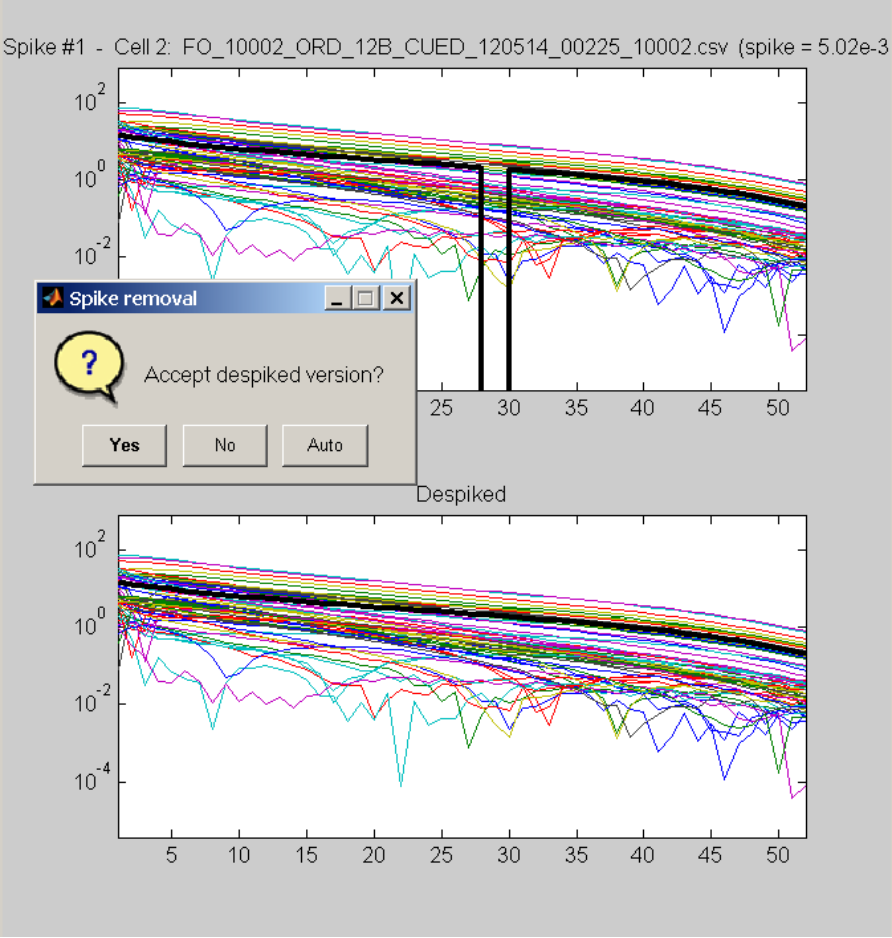

Figure 6-1: Example of Spike Removed From Cued Data

6.2 TARGET SELECTION FOR DETECTION

Target picking was performed on MM data collected in dynamic mode in grids 11A, 11B, 12A, and 12B. An additional 150 targets in Unit 11 were selected from previously collected EM61-MKII data based on response and proximity to existing grids and the size of the anomaly.

The MM detection thresholds were determined during initial IVS and test pit data collection in conjunction with measurements of noise in the high density (11B), and medium density (12B) grids. In the "full" subgrids, 11A SE, 11B SE, 12A NC, and 12B SW, all anomalies over the target threshold were picked for investigation. Target picking was performed using an along-profile picking routine on data from the five central-most receiver cubes, with a minimum separation between targets of 0.5 m. The picking threshold was set at 0.35 mV per amp (mV/A) for a stack of time gates 13 through 16. This was determined to provide a reasonable trade-off between earlier channels more sensitive to small frag near the surface, and channels greater than 18 where the signal to noise ratio became small for a 40mm projectile at 30 cm depth. Outside of these subgrids, the same target picking was performed, but targets were then prioritized by the match of their inverted polarizabilities to those of items in the ordnance library developed at the test pit and analysis of UXO-like features present in their polarizabilities.

The additional 150 EM61 targets in Unit 11 were picked using the Blakely Test in Oasis Montaj, with a minimum EM61 response of 146mV on channel 2. This was determined to be the response of a 155mm projectile at 60 cm depth with the least favorable orientation. Cued data were collected on all of these targets with the MM and all targets were investigated to verify MM inversion results.

6.3 PARAMETER ESTIMATES

Cued MM records for each of the detected anomalies were imported into UXOLab to perform inversions generating information on the x-y-z location and polarizabilities. Both single and multi-target models were fitted during the inversion process up to a maximum of three dipole solutions. These data and models were analyzed using the QCZilla routine in UXOLab seen in **Figure 6-2**. During initial evaluation, the analyst reviewed MM polarizability profiles for each record in conjunction with the amplitude and spatial attributes, inversion model fit statistics (L123 misfit, general model uncertainty, uncertainty of recovered polarizability, color-coded images of the polarizabilities for all nine transmitter-receiver combinations) and predicted depth for each model fit. Polarizability curves from the TOIs from the library reference items shown in **Figure 6-3** were superimposed on the polarizability profile of each MM record, allowing direct comparison of the similarity of the polarizabilities. Decay-size feature plot were used to evaluate the current model's attributes compared to the entire dataset and library of reference items.

Models and inversion results were passed or failed by the data analyst based on model fit, soundness of the inversion results, and data quality. Notes regarding whether the anomaly is a suspected TOIs based on the library of reference items or an elongated, UXO-like object were used to prioritize digs for ranking during dig list development outside of the subgrids where every anomaly was dug.

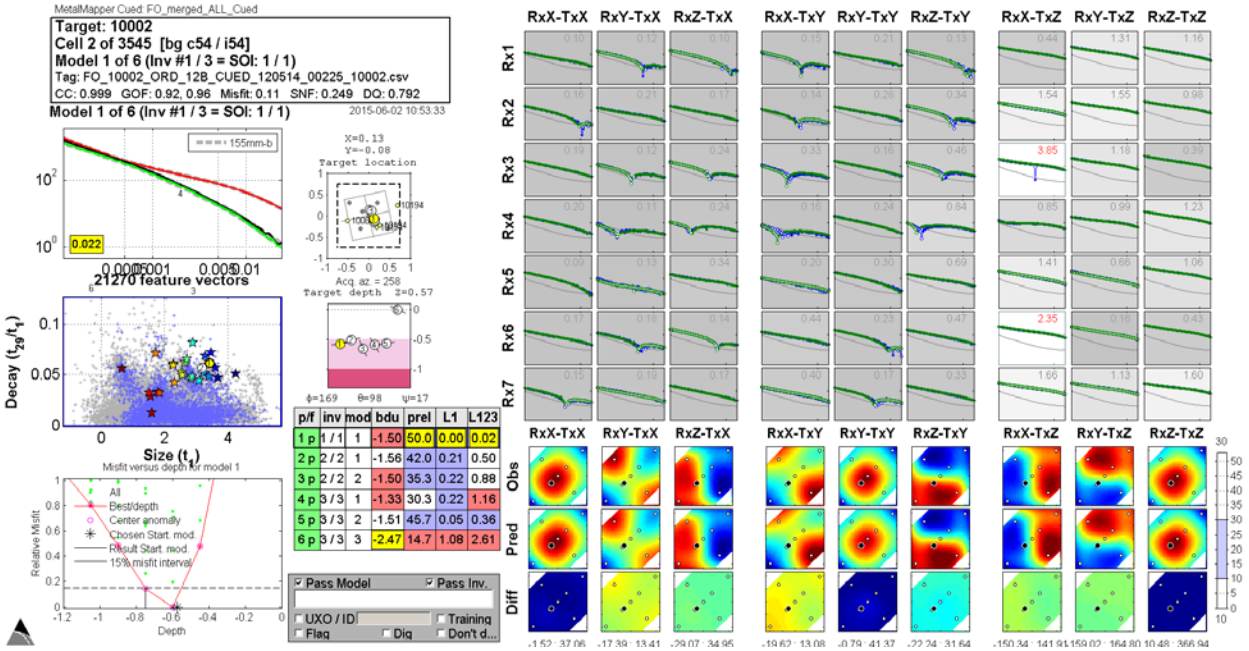

Figure 6-2: QCZilla Default Model Analysis Parameters

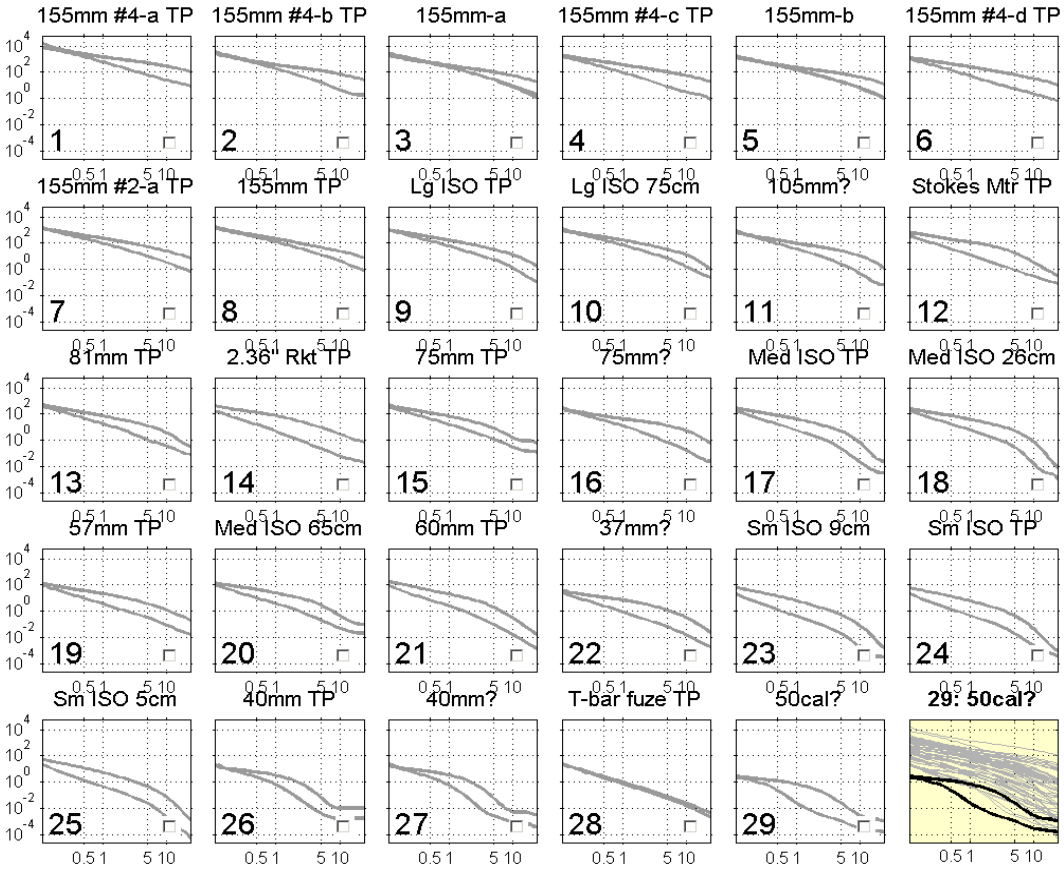

Figure 6-3: Reference Ordnance Polarizabilities Used for Library Matching

6.4 CLASSIFICATION AND TRAINING

Dig list development was accomplished using BTG's Digzilla tool, which is designed to automate the prioritization of the dig list. Using this tool, the analyst was able to interactively prioritize anomalies using various parameters such as polarizability misfit and quality, decay, relative size, analyst notes (e.g., "TOI-like"), and other related attributes.

The polarization curves developed for each target, including any single-object-only results and secondary multiple-object results, were compared to a library of known polarization curves compiled using test stand data and test pit data from published results and this project's testing phase. The items in the comparison library included: 20mm, 37mm, 40mm, 57mm, 60mm, 75mm, 81mm, and 155mm projectiles, small medium and large ISOs, a 2.36-inch rocket, and a Stokes Mortar. All initial comparisons between the measured targets and the library data were performed using an equal weight for all three primary polarizabilities (size: 1, shape 1:1, shape 2:1). If a curve for the primary axis of polarization ($\beta 1$) could not be identified, the target either was left for ranking according to the misfit parameters used for the final dig list or was classified as "can't analyze."

Using cued data models, training data were selected by visual inspection of estimated features. Models passed by the analyst from the inversion were displayed on a feature plot with the decay on the y-axis and relative size on the x-axis along with the library reference items. Anomalies that clustered close to the library reference items were evaluated further in terms of the similarity of their polarizabilities to those of the known TOIs. During the analysis and evaluation process, other clusters (or populations) of anomalies were identified, which exhibited UXO-like polarizabilities, signal amplitude, and decay properties. Examples are: 1) large clusters with "subclusters" of smaller relative sizes than library reference items, variable decay rates, and UXO-like polarizabilities; 2) relative size larger than a small ISO and smaller than a 57mm with UXO-like polarizabilities and decay properties; and 3) non-clustered but having interesting combinations of polarizability, decay, or relative size characteristics. In addition, CB&I analysts requested ground truth for feature vectors that plotted between clusters of TOIs and non-TOIs in order to determine the extents of the distributions of TOI features. CB&I analysts also requested ground truth for non-TOIs, rather than assume that test feature vectors with a large misfit to known TOIs polarizabilities are non-TOIs. CB&I analysts requested ground truth for a total of 84 targets.

6.4.1 "Stop Dig" Point Selection

For this project, TOIs were separated into two categories (TOI 1 and TOI 2). TOI 1 included the large munitions such as 155mm projectiles to a depth of 60cm. TOI 2 included smaller munitions with the smallest TOI being 20mm projectiles. The TOI 1 list was completed in two stages. After the first list was submitted, the ground truth was provided to CB&I analysts. The results were reviewed and additional digs were added based on the ground truth. Initially, the TOI 2 dig list consisted of two stages that were developed using the same procedures as the TOI 1 dig list. After the stage 2 dig list was complete, a review of the ground truth resulted in the discovery of a 20mm projectile that was not initially considered a TOI. After consultation with ESTCP and the USACE QA geophysicist, it was decided that 20mm projectiles should be included as part of the TOI 2 category. Because the stage 2 list was already submitted, a third stage was required that included 20mm projectiles as the smallest TOI. Anomalies on the dig lists were categorized as "TOI," "can't analyze," and "non-TOI."

The UXOLab QC tool was used to determine the initial stop dig point at which items displayed non-UXO like characteristics. Since no TOIs were present in the final round of training and no new information was gained, the "stop dig point" was determined. **Table 6-1** shows the format of the final dig list submitted to ESTCP. Dig lists are presented in **Appendix E**

Table 6-1: Format for Prioritized Anomaly Lists Submitted to ESTCP

Target ID:	Category: -1 = Training Set 0 = Can't Extract Reliable Parameters 1 = Likely TOI 2 = Can't Decide 3 = Likely Non-TOI	Dig Decision: 1 = Dig 0 = Don't Dig	TOI Size Band: (diameter in mm) 1 = diam < 50 mm 2 = 50 < diam < 100 3 = diam > 100 mm (Leave blank for Dig Decision = 0)
FO-50021	-1	1	3
FO-50072	-1	1	2
FO-36056	0	1	3
FO-30320	1	1	3
FO-30548	1	1	1
FO-30479	1	1	1
FO-30167	1	1	2
FO-30283	3	0	
FO-30518	3	0	
FO-30480	3	0	

6.5 DATA PRODUCTS

The following data were delivered as part of the Fort Ord demonstration:

Background Data: Raw and pre-processed background data files were provided along with their locations. The background files will be preprocessed in the same manner as the online data other than no background correction will be performed.

Dynamic and Cued Data: Raw and pre-processed data were provided. The pre-processed data had coordinates converted to UTM Zone 10N and corrected for pitch, roll and yaw, and background removed.

Dynamic and Cued Inverted Data: UXOLab .MAT files containing the inverted and pre-classified data were provided. The following are included in this deliverable:

- **Dynamic Data:** All inverted data used for anomaly detection.
- **Original Anomalies:** Single and Multi-Source Inversion: First shots for all anomalies inverted using the UXOLab.
- **Re-Shot Anomalies:** Single and Multi-Object Inversion: Re-shots inverted using UXOLab.

Initial Anomaly List: A list of all anomalies detected above threshold in the dynamic data.

Final Classification Dig List: The anomaly list prioritized and all anomalies classified. Two dig lists, one based on large TOIs (TOI 1) and one for all TOIs (TOI 1 and TOI 2) are included in **Appendix D**.

Intrusive Investigation Results: Photos and field notes from the intrusive investigation were provided.

7.0 PERFORMANCE ASSESSMENT

The performance objectives and results are summarized in **Table 7-1** and are summarized in the following sections.

Table 7-1: Performance Objectives and Results

Performance Objective	Metric	Data Required	Success Criteria	Results
Data Collection Objectives				
IVS Repeatability	Location and detection amplitudes are repeatable	Dynamic and cued IVS data	Detection amplitudes are within 25%. Locations are within 0.5 m	Failures were observed, which are discussed in more detail later in this section.
Dynamic Data Full coverage	Across-track line separation Along-line data separation	Dynamic data	90% Across-track separation are within 0.5 m. 100% are within 1.0 m. 95% Along-line data separation are within 15 cm. 100% are within 20 cm	All data met the 0.5 m across-track separation metric. The data met the 95% at 15 cm along-line data separation metric. Minor exceedances for not to exceed metrics are discussed later in this section.
TOI Detection	Detection of seed items	Dynamic data	100% of seed items detected	36 of 40 QC and QA seeds were selected as likely TOIs from the detection survey. Results are discussed below.
Cued Data Location	Distance between cued location setup and the inverted location	Cued data	Locations within 40 cm	One failure on target 11168 in Site 12B. 1% above metric.
Data Analysis Objectives				
Correctly classify TOIs	Identify TOIs and seed items	Cued data Excavation results	100% of seed items correctly classified Correctly classify 75% of small TOIs and 100% of large TOIs for each density region	One large TOI was incorrectly classified. The objective for the small TOI was achieved. Results are summarized in Section 7.5.
Correctly classify Non-TOIs	Eliminate false alarms	Cued data Excavation Results	65% of non-TOIs correctly classified	Achieved for non-TOIs within the "TOI 1" category but not achieved for non-TOIs in the "all TOI" category in high density areas, results are summarized in Section 7.6.
Minimize "can't analyze" anomalies	High quality cued data	Cued data	Less than 15% "can't analyze" anomalies.	This objective was achieved. Results are summarized in Section 7.7.
Correctly place the stop dig threshold	TOIs above stop dig threshold	Prioritized dig sheet Excavation Results	No large TOIs below threshold. Correctly classify 75% of smaller TOIs. Minimize non-TOI digs above threshold.	This objective was not achieved for large items due to a single item. Results are presented in Section 7.8.
Correct anomaly location	Anomaly locations on dig list are accurate.	Detection, inversion and excavated locations	Excavated location is within 40 cm of inversion location.	Anomaly 20164-1 is 2.3% above metric for lateral offset. 152 depth failures assoc. with non-frag and non-multiple item recovery.

7.1 OBJECTIVE: IVS REPEATABILITY

The effectiveness of the technology for detection and classification of munitions is dependent on high fidelity data that are defensible and repeatable.

7.1.1 Metric

MM settings and survey parameters are used such that consistent detection and location of IVS seed items are obtained.

7.1.2 Data Requirements

MM dynamic and cued data are collected at the IVS before and after each day's production surveying. Detection data are processed and then compared for repeatable amplitudes and location control. Cued data polarizability curves were matched to the library items and to previous results.

7.1.3 Success Criteria

The objectives are met if detection amplitudes are within ±25 percent for dynamic data and interpreted locations are within 0.5 m of the ground truth location of the seed items.

7.1.4 Results

During the 15 dynamic data tests performed at the IVS, all seed items were detected within the location offset metric of 0.5 m as shown on Figure 7-1. IVS item amplitudes were within 25 percent of reference values obtained during the dynamic testing, except on the October 17, 2014, AM and PM, and for seed 1 during the AM run on October 18, 2014, as shown on Figure 7-2. After review of the IVS survey data it was determined that the amplitude offsets were the result of inconsistent line paths over the seed items and the dynamic data was suitable for the next phase of the project.

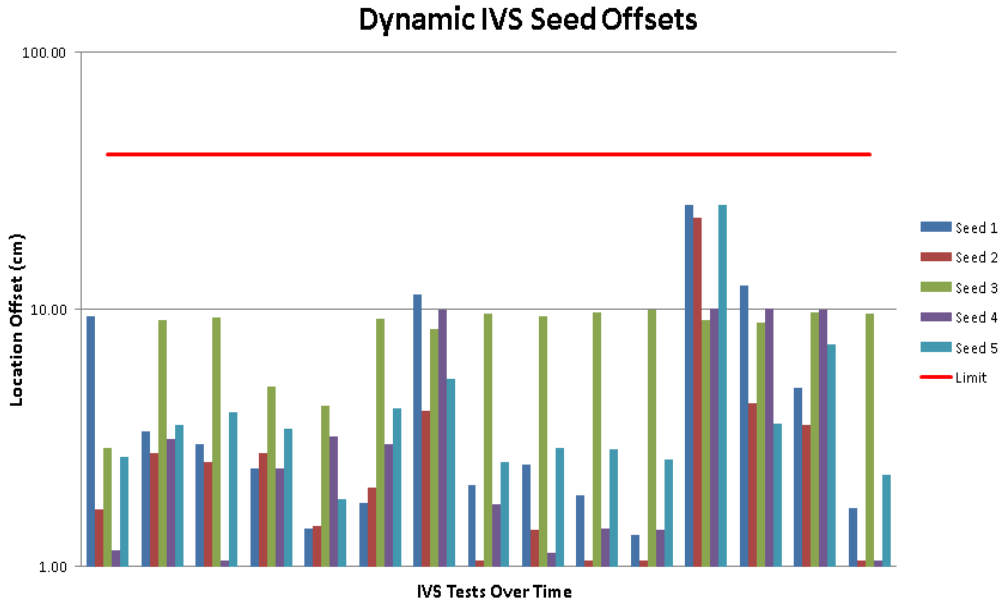

Figure 7-1: Offsets Between IVS Item Locations and Derived Positions during Dynamic Tests

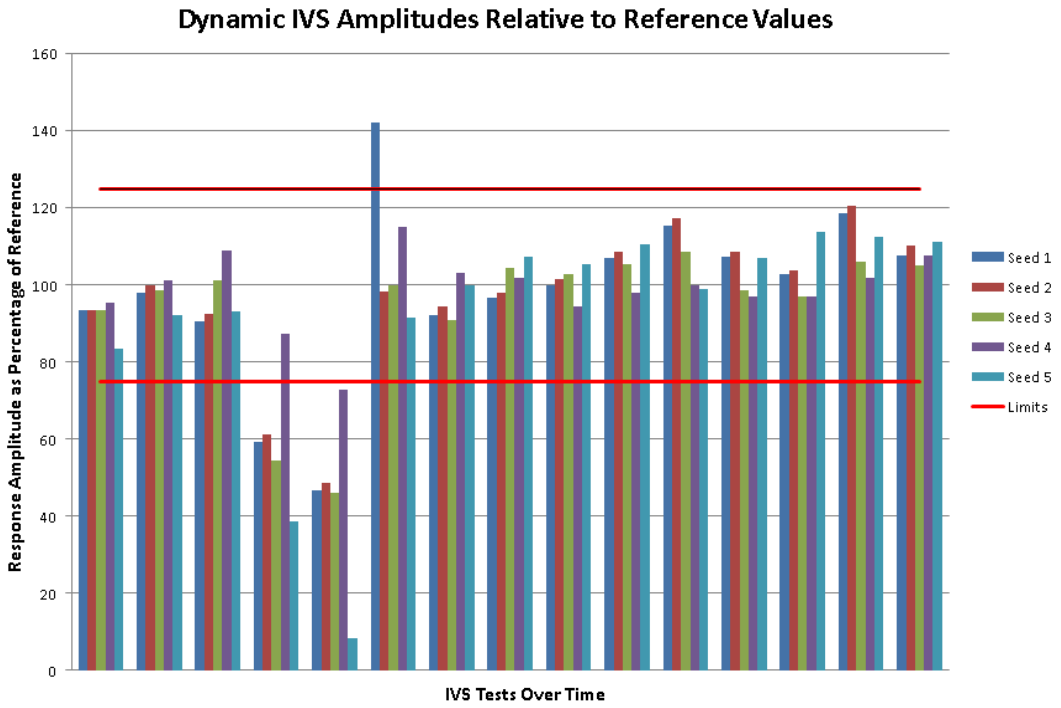

Figure 7-2: Detection Amplitudes of IVS Seeds during Dynamic Testing

Thirty-three cued data tests were performed at the IVS Locations for seed items 1, and 2 passed on all cued data tests. The final eight tests for seed item 3 had location offset failures with a maximum 0.56 m and a median 0.54 m offset. The final test for seed item 5 had a location offset failure of 0.53 m.

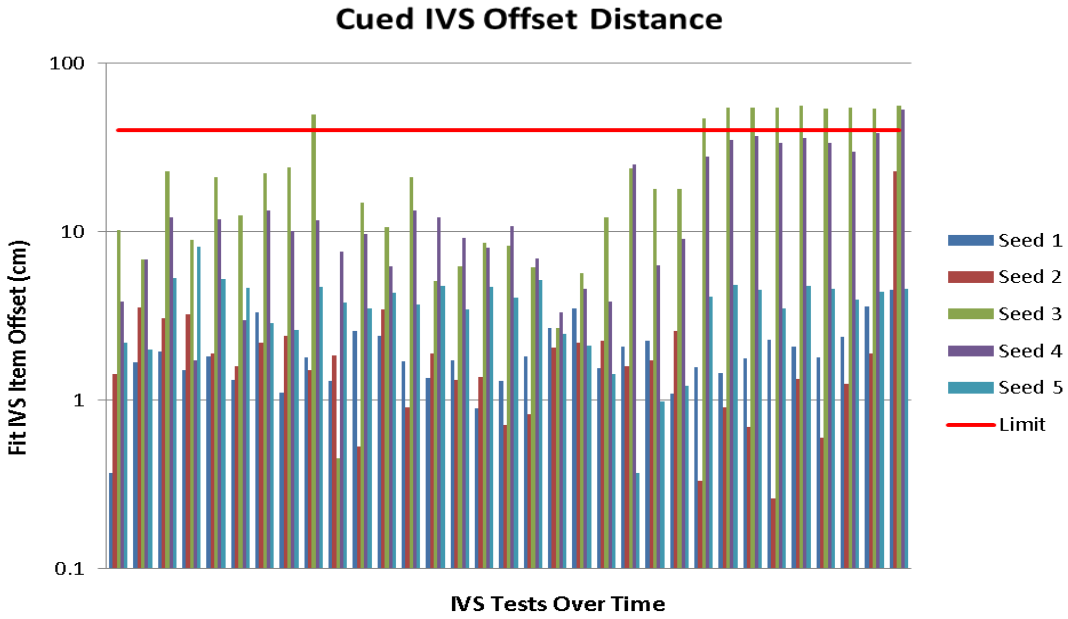

Figure 7-3: Offsets Between IVS Item Locations and Derived Positions during Cued Tests

7.2 OBJECTIVE: DYNAMIC DATA FULL COVERAGE SURVEY

The detection of all munitions depends on ample detection survey coverage. The coverage both along and across line direction are included in coverage.

7.2.1 Metric

MM settings and survey parameters are used such that consistent detection and location of IVS seed items is obtained.

7.2.2 Data Requirements

MM dynamic data are collected with integrated navigation. Data are processed using project procedures determined during IVS data collection. Plan maps are plotted to confirm data cohesiveness. Line to line and along line data points are reviewed for quality and data gaps and the results documented. Data gaps are marked for fill-in data collection.

7.2.3 Success Criteria

The objectives are met if 90 percent across-track separation are within 50 cm and 100 percent are within 1 m. The along-track spacing objective is met if no more than 5 percent of data along line are separated over 15 cm and 100 percent are within 20 cm.

7.2.4 Results

Along-track separation distances met the 15 cm metric with the highest percentage of points over 15 cm being 0.8 percent. All sites had minor exceedances of the maximum along-track separation of 20 cm. Because the DGM was done with the aim of having an across track spacing of 0.5 m, the areas where along-track separations exceeded 20 cm are still characterized adequately by the surrounding lines using the maximum across-track separation of 1 m.

Across-track separation distances met the 0.5 m metric with the lowest passing percentage being 99.20 percent. Minor exceedances were for the 1 m across-track maximum at sites 11A and 12B. The data gaps were recorded along the edges of these areas and are due to the method Geosoft uses to record coverage, which masks data outside the polygon area being tested. This results in survey lines that are within half the footprint size outside the boundary being ignored even though they are contributing to coverage within the survey boundaries.

Coverage results are reported in the **Table 7-2** below.

Table 7-2: Coverage Results

SITE	Along-track > 0.15 m	Along-track > 0.20 m	Across-track < 0.50 m	Across-track < 0.75 m	Across-track < 1.00 m
11A	0.8%	0.1%	99.20%	99.96%	99.99%
11B	0.6%	0.1%	99.63%	99.99%	100.00%
12A	0.8%	0.1%	99.64%	99.99%	100.00%
12B	0.3%	0.0%	99.63%	99.96%	99.99%

7.3 OBJECTIVE: TOI DETECTION

The detection of all TOIs is a desired objective.

7.3.1 Metric

MM settings and survey parameters are used such that consistent detection and location of IVS and blind seed items are obtained.

7.3.2 Data Requirements

MM dynamic data are collected with integrated navigation. Data are processed and, using the project selection criteria, IVS and blind seeds are among all selected anomalies.

7.3.3 Success Criteria

The objectives are met if 100 percent of blind seeds are detected.

7.3.4 Results

Of the 40 blind seeds, 36 were selected for investigation and recovered. All recovered seeds were located within 0.5 m with the largest offset being 0.18 m and a median offset of 0.04 m. The four seeds not selected for investigation were detected outside of the four 100 by 100 ft full clearance grids, but were not selected as part of the higher confidence TOI during dynamic data classification performed by BTG.

7.4 OBJECTIVE: CUED DATA LOCATION

The detection location (dynamic) of all anomalies are near inverted locations (cued) is a desired objective.

7.4.1 Metric

MM setup on the reacquired location of the detection survey is coincident with the location based on the inversion of the cued data.

7.4.2 Data Requirements

The MM is set up on the reacquired location and cued data are collected. Data were checked in the field using WRT software and the MM is moved to the revised location, if necessary, resulting from the data modeled in the field. Cued data are then collected for classification.

7.4.3 Success Criteria

The objectives are met if 100 percent of the targets' modeled locations are within 40 cm of the center of the MM. Those that are greater than 40 cm will be recollected at the modeled source location. If the offset is still 40 cm it will be assumed that this second modeled location is due to a second nearby target and the data is considered a success.

7.4.4 Results

Low Density Area

All dynamic versus cued location offsets at Site 12A are below 40 cm. The largest offset is 35.2 cm.

Medium Density Area

At Site 12B, Anomaly FtOrd-11168 has a dynamic to cued location offset above 40 cm, at 40.4 cm. This is only 1 percent above the metric. Dig results show this frag item to be the 'same as 11116' indicating that the anomaly footprint in the dynamic data was possibly large thereby resulting in duplicate targets for the same anomaly.

High Density Area

At Site 11A, offsets between dynamic target and cued inversion locations are all below 40 cm, with 38.7 cm as the largest offset.

Offset comparison of dynamic and cued locations at Site 11B show all offsets below 40 cm. The largest offset is 38.1 cm.

For the 150 targets spread over Unit 11, initial target picks were taken from EM61 data as opposed to dynamic MM data. Offset comparisons between the initial EM61 target pick and the inverted anomaly locations (cued) show all offsets below 40cm. The largest offset between EM61 target pick and cued location is 32 cm.

7.5 OBJECTIVE: CORRECTLY CLASSIFY TOI

This objective requires the correct classification of all TOIs including seed items detected in the MM data.

7.5.1 Metric

TOI items found during the intrusive investigation are identified as such and were identified for digging.

7.5.2 Data Requirements

The cued MM data are collected at each anomaly detected in the dynamic data, processed, and, using signature library matching and training data, a prioritized dig list is created. The dig list categorizes each anomaly as "high-confidence TOI," "high-confidence non-TOI," and "can't analyze."

7.5.3 Success Criteria

The objective is met when all the TOI and seed items are identified for intrusive investigation. Any "can't analyze" anomalies will also be included on the dig list. As discussed with ESTCP and the USACE-Sacramento Geophysicist, the success criteria is 75 percent of smaller TOIs and 100 percent of larger TOIs (155mm projectiles and larger) correctly classified. The success criteria were evaluated for each of the high, medium, and low density areas.

7.5.4 Results

Seeds

Table 7-3: General Seed Classification Results

Location	Category	Blind Seeds	Blind Seeds correctly classified as TOI	% Blind Seeds correctly classified as TOI	Comments
12A	Low Density	8	7	88	Target 40392 incorrectly classified.
12 B	Medium Density	9	9	100	
11A, 11B	High Density	19	18	95	Target 35030 incorrectly classified.

Thirty Eight QA and QC seeds were selected as targets for validation. The location and type for two of these were disclosed to BTG for calibration purposes resulting in 36 blind seeds. Of these, 34 were classified as TOIs. The two seeds that were not classified as TOIs include a medium ISO and an inert 40mm projectile, which were both classified as clutter.

Target 35030 was a horizontally emplaced medium ISO buried at a depth of 18 cm, located in the high density target area. Inversion in UXOLab resulted in a misfit number below the stop dig threshold that was selected. The primary (L1) and secondary (L2) polarizabilities provided a good match to a medium ISO; however, the tertiary polarizability (L3) did not, which resulted in a higher overall misfit. This resulted in the target being classified as clutter. After further review, it was determined that this target, at a minimum, should have been a training data selection based on the good library match to a medium ISO for the primary and secondary polarizabilities.

Target 40392 was an inert 40mm projectile buried at a depth of 30 cm, located in what was considered a low density target area. Inversion in UXOLab also resulted in a L1,L2,L3 match below the stop dig threshold that was selected. It is likely that this target was too deep for reliable classification since the 40mms that were correctly classified as TOIs were less than 20 cm deep.

The seeds that were correctly classified were located in the low, medium, and high density areas and are included as TOI 1 for larger munitions and TOI 2 for smaller munitions in the following discussion. Note that the EM61 targets that were selected for cued investigation are located within the high density area.

The results for TOI 1 and TOI 2 are summarized in **Tables 7-4 and 7-5** below.

TOI 1

Table 7-4: TOI 1 Classification Summary

TOI 1				
Location	**Category**	**Number of TOI 1 recovered**	**Number Classified as TOI 1**	**% TOI correctly Classified**
12A	Low Density	0	-	-
12 B	Medium Density	1	1	100
11A, 11B	High Density	22	22	100
11	EM61 Targets	7	6	88

TOI that were selected as training were excluded from the TOI list.

Thirty TOI 1 items including twenty-two 155mm projectiles, three 155mm inert seeds, and six large ISOs were recovered during dig operations. One 155mm projectile was selected as training data and is not included in the table above. Target 50048, a 155mm projectile at a depth of 42 cm, was incorrectly classified as clutter in the TOI 1 dig list. The best match to target 50048 was a Stokes Mortar. Because of this, it was classified as TOI 2.

The objective for classifying 100 percent of large munitions items was not met in the high density area due to the incorrect classification of one 155mm projectile in the TOI 1 dig list resulting in 97 percent of the large munitions being correctly classified. However, this item was classified as TOI 2 and included as a dig in the TOI 1 and TOI 2 combined dig list.

TOI 2

Table 7-5: TOI 2 Classification Summary

TOI 2				
Location	**Category**	**Number of TOI 2 recovered**	**Number Classified as TOI 2**	**% TOI correctly Classified**
12A	Low Density	70	67	96
12 B	Medium Density	77	66	86
11A, 11B	High Density	102	84	82
11	EM61 Targets	68	68	100

TOI that were selected as training were excluded from the TOI list

The objective for classifying 75 percent of smaller munitions items was met in the low, medium and high density areas. While the objective for correctly classifying 75 percent of TOI 2 was met, the metric for correctly classifying non-TOI was not, as discussed in Section 7.6 below

All TOI

Table 7-6: TOI 1 and TOI 2 Classification Summary

TOI 1 & TOI 2				
Location	**Category**	**Number of TOI**	**Number Classified as TOI**	**% TOI correctly Classified**
12A	Low Density	71	67	94
12 B	Medium Density	78	71	91
11A, 11B	High Density	124	118	95
11	EM61 Targets	75	75	100

TOI that were selected as training were excluded from the TOI list. Note that the number classified is higher than TOI 1 + TOI 2 because some TOI 1 were classified as TOI 2 and vice versa.

A breakdown of TOI 2 munition types (including seeds) encountered is summarized in the **Table 7-7** below.

Table 7-7: Summary of TOI 2 Munition Types Encountered in Each Area

Item	**Low Density**		**Medium Density**		**High Density**	
	# of TOI 2	**# Classified as TOI 2**	**# of TOI 2**	**# Classified as TOI 2**	**# of TOI 2**	**# Classified as TOI 2**
Projectile, 20mm	3	2				
Projectile, 37mm	4	4	3	3	4	4
Projectile, 40mm	23	22	63	57	1	0
Projectile, 57mm			1	1		
Projectile, 60mm			1	0		
Projectile, 75mm	34	34	7	6	144	143
Projectile, 4.2inch, mortar			1	0**	2	2
Projectile, 81mm, mortar					3	3
Rocket, 35mm, subcaliber					3	0
Projectile 105mm			1	0**		
Projectile, 155mm*	1	0**			6	0**
small ISO	4	4				
medium ISO	1	1			6	5
Total	70	67	77	66	169	152

* Considered TOI 2 due to their recovered depths being greater than 60 cm.

** Classified as TOI 1 and included as digs in the TOI 1 dig list.

In general, the classification results for smaller munitions were better in the low density area. The items most frequently mis-categorized included 40mm projectiles and 35mm rockets. The 40mm projectiles were recovered at depths ranging from 1 to 12 cm. The shallower (1 to 8 cm deep) projectiles that were incorrectly classified were either buried with additional metallic debris or just included the nose piece. The three 35mm rockets were recovered at depths ranging from 8 to 12 cm. These were not anticipated so they were not included in the site specific library. In addition, their recovered size and shape characteristics didn't stand out from most of the clutter encountered on site. One interesting result was that all of the TOI 2 155mm projectiles with depths ranging from 69 to 97 cm were classified as TOI 1, which was unexpected based on test results obtained in the training pit where measurements of deeper 155mm projectiles produced poor inversion results.

The 150 targets selected from the EM61 data resulted in the recovery of 8 TOI 1 items and 69 TOI 2 items. A summary of the TOI items recovered from the targets selected in the existing EM61 data is provided in **Table 7-8** below. The overall performance for the EM61 targets is summarized in **Tables 7-4 through 7-6** above.

Table 7-8: TOI Items Recovered From the EM61 Data Including Targets Selected as Training Data

Dig Type	Item	#
TOI 1	Projectile 155mm	8
TOI 2	Projectile 155mm	3
	4.2-inch Mortar	1
	Projectile, 60mm	1
	Projectile, 75mm	61
	81mm Mortar	3
	Total	77

The library match results for all TOI compared with the actual items recovered are included in **Appendix E**. With the exception of target 50048, the predicted munition types resulting from library matches matched the ground truth results for the large munitions, which is evident in the TOI 1 classification results. A few large ISOs were matched to 105mm projectiles, but the actual difference in diameter between the two is small.

A qualitative review of the library match results for the smaller TOI 2 targets showed that the munition types were generally consistent with ground truth with a few exceptions. In the low density area, about 5 percent of the modeled TOI items were mismatched in terms of munitions type. In the medium density area, about 10 percent of the items were mismatched. The largest differences were encountered in the high density area, with about 15 percent of the TOI items mismatched in terms of munitions type. In both the medium and high density areas, the most commonly mismatched items corresponded to the most common TOI type encountered, 40mm projectiles and 75mm projectiles, respectively. Most of the differences were the result of the predicted size being larger than ground truth.

7.6 OBJECTIVE: CORRECTLY CLASSIFY NON-TOIS

The detected anomalies that are not TOIs are classified as non-TOIs. This objective shows the effectiveness of the classification system at reducing the number of excavations.

7.6.1 Metric

Only a percentage of non-TOIs classified items are dug and that most non-TOIs items are identified as such and are not identified for digging.

7.6.2 Data Requirements

The cued MM data are collected at each anomaly detected in the dynamic data, processed, and, using signature library matching and training data, a prioritized dig list is created. The dig list categorizes each anomaly as "high-confidence TOI," "high-confidence non-TOI," and "can't analyze."

7.6.3 Success Criteria

The objectives are met if 70 percent of non-TOIs are correctly classified. Additionally, it is anticipated that 65 percent of the non-TOI are below the dig threshold on the anomaly list.

7.6.4 Results

The results are summarized in **Tables 7-9 through 7-11** below.

TOI 1

Table 7-9: Non-TOI Classification Summary for TOI 1

TOI 1				
Location	**Category**	**Non-TOI recovered**	**Classified as non-TOI**	**% non-TOI correctly classified**
12A	Low Density	394	390	99
12 B	Medium Density	471	461	98
11A, 11B	High Density	1707	1605	94
11	EM61 Targets	139	128	92

Non-TOI numbers excluding training data.

The objective was met in the stage 1 dig list with the best performance in the low density area. The size estimate, decay, and recovered polarizibility results for the majority of the targets were not consistent with larger munitions items and resulted in poor matches to the 155mm projectile and large ISO data included in the TOI 1 library. This result was anticipated, since targets resulting from larger items were expected to be a small portion of the actual targets on site.

TOI 2

Table 7-10: Non-TOI Classification Summary for TOI 2

TOI 2				
Location	**Category**	**Non-TOI recovered**	**Classified as non-TOI**	**% non-TOI correctly classified**
12A	Low Density	323	244	76
12 B	Medium Density	392	273	70
11A, 11B	High Density	1617	763	47
11	EM61 Targets	78	24	31

Non-TOI numbers excluding training data.

The objective was met for the low density area but not for the medium and high density area. This result was also expected. One issue was the similar physical dimensions between frag and smaller munitions like 40mm projectiles, which resulted in library matches within the range of those observed in training data. In addition, training data requests revealed smaller munitions like 40mm projectiles with relatively poor library match results and higher misfit values. Because of this, the dig list was expanded to include targets with larger misfit values.

All TOI

Table 7-11: Non-TOI Classification Summary for TOI 1 and TOI 2 Combined

TOI 1 & TOI 2				
Location	**Category**	**Non-TOI recovered**	**Classified as non-TOI**	**% non-TOI correctly classified**
12A	Low Density	319	242	76
12 B	Medium Density	392	266	68
11A, 11B	High Density	1583	757	48
11	EM61 Targets	73	24	33

Non-TOI numbers excluding training data.

The results for all TOI are similar to the TOI 2 results, which were both influenced by the similarities between frag and smaller TOI coupled with the poor match results for smaller munitions.

7.7 OBJECTIVE: MINIMIZE "CAN'T ANALYZE" ANOMALIES

When data can't be analyzed the anomaly cannot be classified. These anomalies must be dug, increasing the numbers of dig, potentially digging non-TOI, and reducing the effectiveness of the advanced classification program.

7.7.1 Metric

Only a small number of “can’t analyze” anomalies is the metric.

7.7.2 Data Requirements

The cued MM data are collected following best practices at each anomaly to minimize the number of anomalies that can’t be analyzed and to maximize the number of anomalies that can be reliably classified.

7.7.3 Success Criteria

The objectives are met if 85 percent of all the anomalies have clean, reliable data leaving 15 percent of cued data classified as “can’t analyze.” Results

Only two targets were categorized as can’t analyze for a total of 0.07 percent. The objective was achieved.

7.8 OBJECTIVE: CORRECTLY PLACE THE “STOP DIG” THRESHOLD

The “stop dig” threshold is the dividing line between the digs and the no-digs. The objective is that all TOIs, seed items, “can’t analyze” anomalies, and validation anomalies are above the stop dig threshold and the non-TOI are below. This objective shows the effectiveness of the classification system at reducing the number of excavations.

7.8.1 Metric

All TOIs, seed items, “can’t analyze” and validation check anomalies are dug and that most non-TOI items are identified as such and are not identified for digging.

7.8.2 Data Requirements

The dig list including classification results and excavation results are compared and a ROC curve is prepared.

7.8.3 Success Criteria

The objectives are met if the ROC curve is steep and 65 percent of non-TOIs and 75 percent of smaller TOIs and 100 percent of larger TOIs are above the stop dig threshold.

7.8.4 Results

TOI 1

The ROC curve for TOI 1 is presented in **Figure 7-4** below.

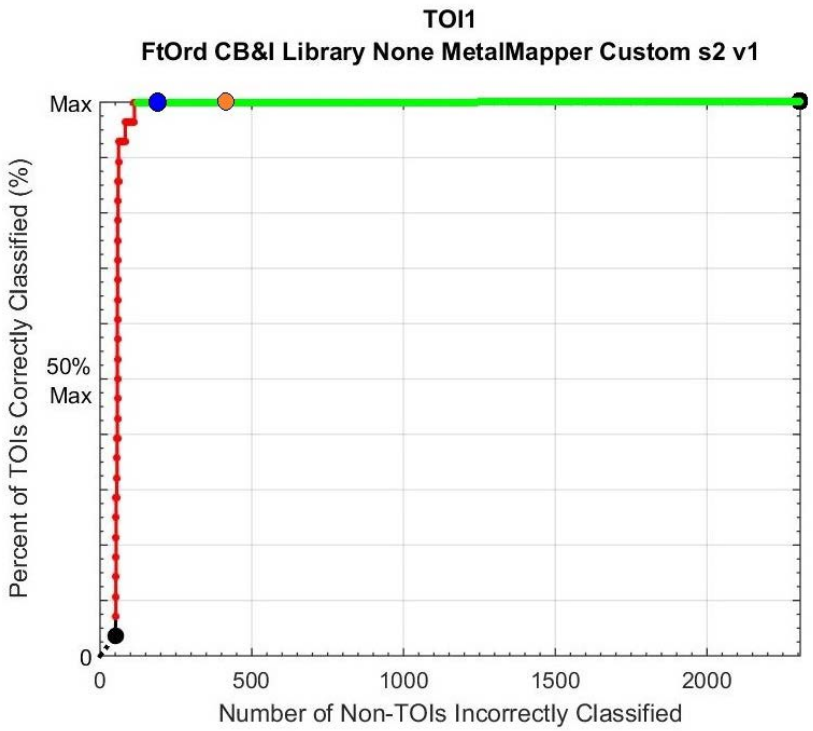

Figure 7-4: ROC Curve for Large Munitions Dig List (TOI 1)

The TOI 1 dig list included a total of 219 digs out of 2,803 targets, which included training targets and can't analyze targets. This resulted in approximately 8 percent of the available targets being selected for excavation. This dig list resulted in one 155mm projectile (target 50048) being incorrectly categorized. Adjusting the stop dig point to include target 50048 would result in the addition of 165 digs resulting in 384 digs, which is about 14 percent of the available targets. If 10 percent of the remaining targets were excavated for validation, approximately 22 percent of the available targets would be excavated.

TOI 2

The ROC curve for TOI 1 and TOI 2 is presented in **Figure 7-5** below.

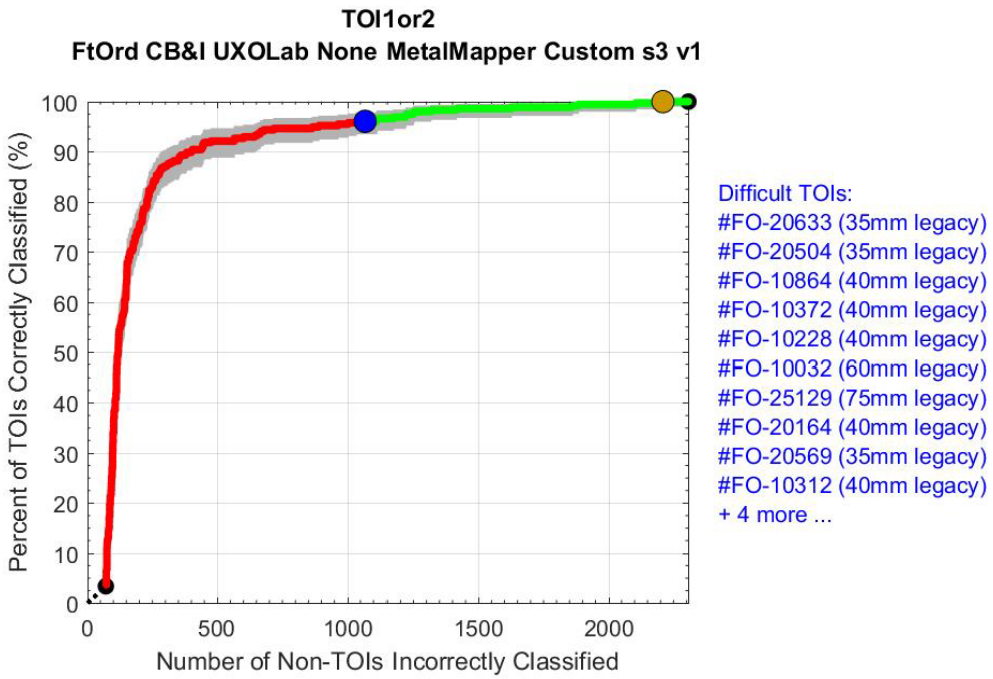

Figure 7-5: ROC Curve for Smaller Munitions Dig List (TOI 2)

The TOI 1 and TOI 2 dig list included a total of 1,500 out of 2,803 targets, which included training targets and can't analyze targets. This resulted in 54 percent of the available targets being selected for excavation with 16 TOIs still classified as clutter. The last TOI item on the dig list classified as clutter was a 40mm projectile at a depth of 1 cm located at dig number 2687. For the low, medium, and high density target areas combined, the stop dig threshold selected for TOI 2 successfully identified well over 75 percent of smaller TOIs. However, the final ROC curve illustrates the large number of non-TOIs categorized as TOIs. This is heavily weighted by the large number of non-TOI that was incorrectly classified in the dense areas.

Although one 155mm projectile was excluded from the TOI 1 list, as illustrated in the **Figure 7-4**, the curve is steeper, which is the desired result. The curve for TOI 1 and TOI 2 combined, illustrates the difficulty encountered by CB&I analysts when trying to identify smaller TOI in areas with a significant amount of clutter.

7.9 OBJECTIVE: CORRECT ANOMALY LOCATION

The modeled location from the cued data accurately depicts the location (laterally and vertically) of the anomaly source.

7.9.1 Metric

The metric is the offset between the inverted anomaly location and the excavated location.

7.9.2 Data Requirements

The dig list x, y coordinates (inversion results) and the dig team's offset between the dig list and recovered locations are compared.

7.9.3 Success Criteria

The objectives are met if 90 percent of the two location offsets are within 40 cm and the depths are within 10 cm.

7.9.4 Results

Low Density Area

A comparison of the predicted locations to excavated location offsets at Site 12A shows one target was offset 44 cm from the final predicted location to the actual dig location resulting in over 99 percent of the targets being within 40 cm, meeting the objective. Of the 403 anomaly locations, 69 (17 percent) show depth offsets above 10 cm. Of these, 35 percent are associated with multiple items excavated indicating that the cued inversion results were most likely skewed.

Medium Density Area

At Site 12B, 16 targets had offsets over 40 cm from the predicted locations to the actual dig locations resulting in 97 percent of the predicted locations being within 40 cm, meeting the objective.

Out of 495 locations, 113 (23 percent) have depth offsets above 10 cm. Of these, 17 failures are associated with excavation locations where multiple items were recovered.

High Density Area

For the 150 targets in Unit 11, five targets had offsets of over 40 cm between the predicted locations and the dig locations resulting in 97 percent of the targets being within 40 cm, meeting the objective. Depth comparison between inversion and dig list results shows 50 out of 150 locations with depth offsets above 10 cm. At 75 percent of these 50 locations, however, the dig team recovered multiple items during excavation, skewing inversion depth and size results. At Site 11A, 12 targets were over 40 cm between the predicted locations and the dig locations resulting in 98 percent of the targets being within 40 cm, meeting the objective. Thirty-eight (38) percent (314 out of 822) of depth offsets between cued and dig locations are above 10 cm, with 49 percent of these associated with locations in which the dig crew recovered multiple items. For Site 11B, 19 targets had offsets of over 40 cm between the predicted locations and the dig locations resulting in 98 percent of the targets being within the metric, meeting the objective. Almost half of the depth offsets for 11B are above 10cm; however, at 51 percent of these locations, multiple items were excavated. Of these depth failures, 45 are both non-frag and unique for the excavation location.

8.0 COST ASSESSMENT

This section presents cost and production data and analysis for the MM demonstration at Fort Ord.

8.1 PRODUCTION DATA

The MM Demonstration at Fort Ord included:

- Dynamic data collection: 4.59 acres
- Cued data collection: 2,803 targets
- Subsurface investigations: 2,803 targets

8.1.1 Dynamic Surveys

CB&I collected dynamic MM data in twenty 100 ft by 100 ft grids for a total area of 4.59 acres.

After site preparation, the dynamic mapping was completed in 6 days for an average production of 0.8 acres/day. Total hours were 460, equivalent to 100 hours/acre. Approximately half of these hours were associated with equipment setup. Actual surveys were completed in about 2.5 days or about 1.8 acres/day.

The mapping required a crew of one tow vehicle operator and one geophysicist, supported by one UXO technician. CB&I trained six different geophysicists during the dynamic mapping. Considering only the three-person crew required for survey, total hours would have been 180, equivalent to 39 hours/acre.

8.1.2 Cued Surveys

CB&I cued a total of 2,803 targets consisting of:

- 100 percent investigation grids: 2,125
- High likelihood TOIs: 528
- Selected EM61 targets: 150

The cued data collection was completed in 14 days for an average production of 200 targets/day. Excluding partial survey days, production ranged from 124 to 335 targets/day. Total hours were 757, equivalent to 0.3 hours/target. This total includes approximately 160 hours for reacquiring cued targets and placing flags for the dig team.

The cued survey required a crew of one skidsteer operator and one geophysicist, supported by one UXO technician. CB&I trained four different geophysicists during the cued surveys. Considering only the 3-person crew required for survey, total hours would have been 420, equivalent to 0.19 hours/target.

8.1.3 Subsurface Investigations

CB&I investigated a total of 2,803 targets consisting of:

- 100 percent investigation grids: 2,125
- High likelihood TOIs: 528
- Selected EM61 targets: 150

The investigations were completed in 43.5 days for an average production of 64 targets/day. Excluding partial survey days, production ranged from 37 to 92 targets/day. The digs were completed with a crew of three UXO technicians supported by a geophysicist responsible for documentation and data management. Total hours were 1901 equivalent to 0.7 hours/target.

8.2 COST BREAKDOWN

This following table provides an overview of the costs expended for the demonstration at Fort Ord.

Table 8-1: Overview of Costs, Fort Ord

Budget element	As Invoiced	% of Total
Project set up and work plan	30,872	5%
Site and Equipment Prep	48,425	8%
Subcontracts and equipment	21,127	3%
DGM field (incl escort)	73,357	12%
DGM home office	142,233	22%
Subsurface investigations (incl geo)	124,971	20%
Travel (hotel and perdiem)	84,782	13%
Report	69,641	11%
Project management	40,919	6%
	636,327	

This table shows costs as invoiced with travel and equipment broken out to separate cost codes. Costs are shown through December 2016 plus an estimate of costs to complete the report. Costs do not include fee.

In the following table costs are shown for each major project task, with travel and equipment distributed by task.

Table 8-2: Project Cost Breakdown by Task

Budget element	Cost by Task	% of Total
Project set up and work plan	17,897	3%
Metal mapper repair	12,975	2%
UXO setup (brush cutting)	27,118	4%
DGM setup (IVS and equipment)	21,307	3%
Setup	32,627	5%
Dynamic surveys	23,890	4%
Cued surveys	69,569	11%
Reacquisitions	18,271	3%
DGM home office	158,560	25%
Subsurface investigations (incl geo)	141,786	22%
Report	69,641	12%
Project management	42,686	7%
	636,327	

Again, costs are estimated through completion of the report.

These costs do not include the following items provided by ESTCP or the Ford Ord Installation:

- MM rental
- Disposal of MEC and MD (provided by Installation contractor)
- Travel, lodging and per diem for two of three UXO staff (local staff used)
- Skidsteer rental (provided by Installation)
- RTK rental (provided by Installation)
- Facilities support (machine shop, storage, office space, telecommunications – provided by Installation

Unit costs for activities such as dynamic or cued surveys are not provided because they are distorted on the one hand by costs absorbed by the Installation and on the other hand by significant investments in training multiple CB&I geophysicists.

8.3 COST ANALYSIS

It is possible to analyze the costs for advanced classification at Fort Ord and compare against costs for conventional EM61 survey and anomaly investigation. The costs for advanced classification are adjusted to account for a production project versus a training project and to include equipment rental. Costs for EM61 surveys are based on CB&I experience at Fort Ord.

This comparison should be considered to be approximate given a number of assumptions involved. In both cases these costs do not include site management (Senior UXO Specialist, UXO QC Specialist, or UXO Safety Officer) and project management.

This analysis considers a 100-acre site with an average 300 targets/acre. Total cost for EM61 survey and investigating 100 percent of targets is $2.5M or $25,000/acre.

As stated in Section 7.8, the dig list for TOI 1 targets in the four Fort Ord grids evaluated in detail would have included 22 percent of the total targets and 78 percent of the targets would not have been investigated. If both dynamic and cued advanced classification surveys were performed in place of EM61, and only 22 percent of anomalies were excavated, the total cost would be about $1.5M, a savings of $1.0M. If cued advanced classification surveys were based on EM61 data (i.e., no dynamic advanced survey), the total cost would be $1.0M, a savings of $1.5M.

The savings that may result from advanced classification methods evidently depend on the number of investigations saved. For the cases presented above, the break-even for conventional surveys versus combined dynamic and cued surveys is about 50 percent of targets included in the dig list. For conventional surveys versus combined EM61 and cued surveys, the break-even is about 70 percent of targets included in the dig list.

This analysis is based on investigating only larger TOI items that can be distinguished from the high density of clutter observed at Fort Ord. Advanced classification would not provide cost benefit versus conventional DGM if all TOIs have to be investigated.

These cost comparisons may be considered to a best case favoring advanced classification in that at this time there is much greater uncertainty concerning advanced classification cost than there is for conventional surveys and investigations. The cost for any real production project will be highly dependent on site specific factors. From an estimating and contractual perspective, at this stage in advanced classification development, factors of particular concern will include:

- Production rates for new generation equipment
- Acquisition costs for new generation equipment, rental or purchase
- Reliability of new generation equipment
- Costs for data processing (which depend in part on stability of available software)
- Additional QA and QC costs associated with advanced classification.

9.0 IMPLEMENTATION ISSUES

Overall, the data collection and processing phases of work were completed with minimal obstacles. Some of these, relevant to the future use of the MM and associated software are discussed here.

9.1 ADVANCED CLASSIFICATION SENSOR

The ESTCP project benefited from the use of a USACE owned MM sensor. A condition of this use included the manufacturer repairing the MM unit before testing and fieldwork began. During the fieldwork portion of the project, the unit had to be returned two more times to the manufacturer for additional repairs. Fortunately, the manufacturer was located less than two hours from the site, but in a remote setting this would be a significant cause of delays. Ruggedization of the internal components would be beneficial to use of the MM sensor in a production environment. Increased ruggedization is a purported benefit of the second generation MM entering the commercial market, but remains to be extensively evaluated in field conditions.

Heavy machinery was a necessity for moving the MM. As such, the skill of the operator with such machinery was key to the speed of data collection and the proper positioning of the sensor over targets. Once in the grid with everything preconfigured, a handful of geophysicists tried their hands at the data collection, with rough production rates ranging from 20 to 25 targets per hour. However, the skilled equipment operator, well versed in geophysical data collection, was able to achieve rates between 40 and 50 targets per hour.

The size of the MM and the nature of the fixed booms used in this project meant that in some of the more heavily cratered areas of Unit 11 the sensor was not flush with the ground when attempting the closest positioning possible of the target. Other difficult terrains and brush conditions have a similar effect.

9.2 ADVANCED CLASSIFICATION SOFTWARE

The In-field QC software was very useful in minimizing the number of recollects required at later dates. A minor issue was that it would slow down the acquisition computer after roughly 50 cued targets had been collected. A simple work around was to restart the software, which meant the lost indication of collection progress, but this was still indicated in the EM3DAqcuire software. The In-field QC software is limited to quickly generated, single-source models, which can become less useful in the areas of highest density clutter.

BTG's UXOLab proved to be a powerful processing and classification tool. The fact that it is developed with MATLAB® means there is some inherent slowdown compared to code compiled in C for example, but at the same time, routines such as inverting data benefit from the parallel abilities and the nonlinear optimization package. The parallelization in UXOLab is dependent upon the amount of memory available, and can easily overwhelm a fast computer with a standard amount of memory to the point where inversion times would be on the order of days. Numerous bugs were reported to the developers in the beginning of the processing work, but all were resolved, with updated versions of UXOLab being available within a matter of days.

The statistics and metrics calculated with the UXOLab software are inherently different than a few of the key MQO metrics specified in the Draft Advanced Geophysical Classification for Munitions Response Quality Assurance Project Plan (QAPP) Template, which have been written with UXAnalyze in mind. These include the fit coherence, match metric, and decision statistic from UXAnalyze. Instead of the match metric, UXOLab uses a L123 misfit to evaluate polarizability matches of a target to those in a library. Without a standard value, like a match metric of 0.9 for example, the analyst needs to have the experience and knowledge to set a L123 misfit threshold to accomplish categorization and ranking. The inclusion of metrics consistent with the QAPP guidance would be useful for analysts to standardize results, but the development of similar guidelines for UXOLab metrics could be another solution.

During the demonstration, CB&I analysts were unable to complete dynamic data inversions with the UXOLab software. The objective was to compare dynamic inversion results with cued inversion results and determine if the dynamic data can be used in lieu of cued data collection. Initial attempts by CB&I analysts resulted in computer crashes and incomplete results. Although bugs were reported and several software updates were provided by BTG, the CB&I team had limited success. At the time of this study, UX-Analyze was unable to process dynamic MM data. However, dynamic inversions were completed by BTG and presented to BRAC and USACE.

9.3 ADVANCED CLASSIFICATION IN AREAS OF DENSE CLUTTER

Due to the large amount of buried metallic debris in Unit 11, suitable background measurement locations were anticipated to be difficult to locate with the MM at the time of survey. Therefore, several possible locations were selected that had relatively quiet EM61 readings from previous DGM surveys. These were then checked in the field and, if necessary, were cleared using handheld metal detectors and EM61s prior to data collection.

Both the primary objective of classifying large munitions in areas of dense clutter and correctly classifying over 75 percent of smaller munitions as TOI was achieved for the types of munitions encountered and summarized in **Table 7-7**. However, the large amount of clutter in the dense areas resulted in a large number of false alarms when the goal is to classify smaller munitions. The types of clutter that were incorrectly classified as TOI included fuzes, small arms, frag, and frag pits. Over 94 percent of the non-TOI classified as TOI were the result of frag, which ranged in length from 2 cm to 38 cm. In general, the corresponding library matches were inconsistent with the ground truth in terms of physical dimensions for the frag.

One of the features of UXOLab is the ability to model up to three source objects for each target. Three object models were chosen for the dig list in cases where the L123 misfit was lower than one or two object models. A total of 1,094 target inversions resulted in three object models, which had better L123 misfit values than one and two object models and were therefore used in the final dig list. Most of the three object models resulted in the recovery of single items where 301 resulted in the recovery of multiple items. Of the 1,094 three object models, 130 were TOIs. Figure 9-1 shows the difference in the L123 misfit between the three object models and the one and two object models. In general, the three object models did result in better misfit values for TOIs. The average L123 misfit for the best object in the three-item inversion was 0.462 while the average L123 misfit for the one and two item inversions was 0.546.

However, most of the excavations resulted in single items being recovered. TOI type 2 targets 50001, 30025, 25340, and 10132 were above the stop dig point using the three object models but were below it using the one and two object models and would have resulted in incorrectly classified TOIs. Two items were recovered at target 30025 while one item each was recovered for the targets 50001, 25340, and 10132. One TOI type 1 target (target 25713) would have also been incorrectly classified as non-TOI.

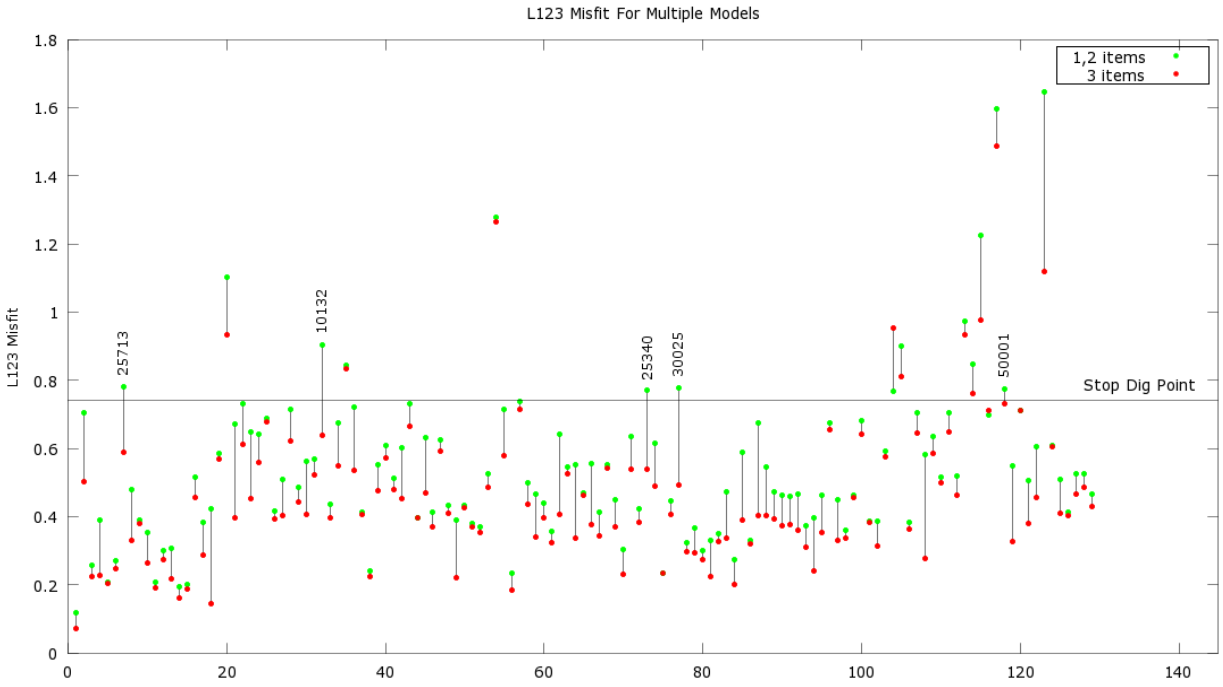

Figure 9-1: L123 Misfit Comparison Between 1&2 Object Models Versus 3 Object Models

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10.0 SUMMARY AND CONCLUSIONS

All large munitions were classified as TOI. However, the TOI 1 dig list did not achieve 100 percent classification of TOI 1 due to one 155mm projectile being classified as TOI 2. A review of the final dig results indicates that adjusting the stop dig threshold to include approximately 165 more targets would have resulted in 100 percent classification for TOI 1. If a validation process was simulated with at least 10 percent of the remaining digs investigated, the 155mm projectile that was classified as TOI 2 would have been recovered. With the inclusion of 10 percent of the remaining targets included as validation digs beyond the last TOI, the number of excavations would increase to approximately 22 percent of the available targets, which includes targets chosen as training data and can't analyze targets. Therefore, using advanced classification could eliminate 78 percent of the digs resulting in a significant cost savings. One unexpected result was that all the 155mm projectiles that were deeper than 60 cm were also correctly classified as TOI 1.

While the objective of classifying 75 percent of all TOI was met, a large number of non-TOI targets were also excavated. A reduction of only 46 percent of available targets was achieved. Based on the budget analysis, the comparison between conventional EM61 surveys and both dynamic and cued advanced classification surveys is slightly higher than the break-even point. However, when combining conventional EM61 surveys with cued advanced classification surveys, the savings are significant. In practice, removing 75 percent of TOI would be impossible to determine without excavating all targets to determine the actual number of TOI present at a site. Based on the results obtained using the available technology combined with the site conditions encountered, a 100 percent removal of all TOI down to 20mm projectiles with a high degree of confidence would be very difficult without excavating all targets.

Seven of the targets selected from the EM61 data resulted in the recovery of 155mm projectiles. Including training data, a total of 22 EM61 targets were categorized as digs in the TOI 1dig list representing 15 percent of the available targets. Inclusion of 10 percent validation digs for the remaining targets results in 35 total digs or 23 percent of the total targets. This saves about 77 percent of the digs, which is similar to the overall results for TOI 1. Based on the results from this study, the existing EM61 data combined with cued MM data were successful for classifying large munitions. The threshold for selecting EM61 targets was based on published NRL response values. No additional tests CB&I carried out to verify that the target selection threshold used would sufficiently detect all 155mm projectiles at depths up to 60 cm. In practice, additional threshold and target selection analysis is recommended in order to achieve a high confidence that all 155mm projectiles have been detected.

Although, in depth analysis of dynamic versus cued inversion comparisons were not completed by CB&I, initial tests carried out by BTG indicated that dynamic and cued data inversions both produced similar polarizability results for the high likelihood TOI. One benefit is a reduction of the number of cued measurements required since high likelihood TOI targets, determined from dynamic data, can be automatically added to the dig list.

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U.S. Department of the Army (Army), 2008. *Final Track 3 Record of Decision, Impact Area Munitions Response Area, Track 3 Munitions Response Site, Former Fort Ord, California.*

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APPENDIX A POINTS OF CONTACT

Point of Contact Name	Organization Name Address	Phone Fax Email	Role in Project
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Kevin Kingdon	Black Tusk Geophysics #401, 1755 West Broadway Vancouver, BC V6J 4S5	604-428-3382 kevin.kingdon@btgeophysics.com	Trainer for UXOLab and BT-field software
Barry Zelt	Black Tusk Geophysics #401, 1755 West Broadway Vancouver, BC V6J 4S5	604-428-3382 barry.zelt@btgeophysics.com	UXOLab trainer and data analyst

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APPENDIX B SURFACE REMOVAL RESULTS

MEC Items Found During Surface Removal

Description	Number of Items Unit 11		Number of Items Unit 12		
	UXO	DMM	UXO	DMM	MC
Booster, unknown			1		
Candle, Smoke, Screening, HC				1	
Cartridge, 40mm, prac, M781		4			
Fuze, projectile, comb, M1907	1				
Fuze, projectile, PD, M48 series	1				
Fuze, trench mortar, PD, MK VI			1		
Grenade, hand, frag, M67	1				
Grenade, hand, prac, M69	1				
Grenade, hand, smoke, M18 series	1				
Mine, APERS, M18A1 (claymore)	1				
Projo, 105mm, HE, M1	7		7		
Projo, 105mm, smoke, M84 series	1				
Projo, 155mm, HE, M107	4		4		
Projo, 155mm, HE, MK 1	4		2		
Projo, 155mm, shrapnel, MK 1	13				
Projo, 37mm, HE, M54	4				
Projo, 37mm, HE, M63			3		
Projo, 37mm, HE, MK II	24		4		
Projo, 37mm, LE, MK I	226		99		
Projo, 37mm, LE, MK II	59		19		
Projo, 4.2inch, mortar, illum, M335 series			1		
Projo, 40mm, HE, M383	6		4		
Projo, 40mm, prac, M407A1	1				
Projo, 40mm, prac, M918	1		22		
Projo, 40mm, practice, model unknown	1				
Projo, 57mm, HE, M306 series	11		7		
Projo, 60mm, mortar, HE, M49 series	5		1		
Projo, 60mm, mortar, illum, M83 series	4				
Projo, 60mm, mortar, prac, M50 series	1				
Projo, 60mm, mortar, smoke, WP, M302			1		
Projo, 75mm, HE, M48	25		14		
Projo, 75mm, HE, MK I	21		18		
Projo, 75mm, HEAT-T, M310 and M310A1			1		
Projo, 75mm, Shrapnel, MK I	71		57		
Projo, 81mm, mortar, HE, M43 series	17				

MEC Items Found During Surface Removal

Description	Number of Items Unit 11		Number of Items Unit 12		
	UXO	DMM	UXO	DMM	MC
Projo, 81mm, mortar, illum, M301 series	4		1		
Projo, 81mm, mortar, prac, M43 series	1				
Projo, 81mm, mortar, smoke, WP, M375 series	1				
Projo, 84mm, HEAT, M136 series (AT-4)	6				
Projo, 8inch, HE, M106	1				
Projo, 8inch, HE, MKIA1	4				
Projo, 90mm, HEAT, M371A1	2				
Pyrotechnic mixture, illum					2
Pyrotechnic mixture, smoke	2				
Rocket, 35mm, subcal, prac, M73	29				
Rocket, 66mm, HEAT	2				
Rocket, 66mm, incen, TPA, M74	1				
Signal, illum, ground, M125 series	1				
Signal, illum, ground, M126 series	1				

APPENDIX C DIG RESULTS

To be provided electronically on CD

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APPENDIX D PRIORITIZED DIG LISTS

ESTCP Classification Demonstration Ranked Anomaly List

Site	FtOrd
Analyst	CB&I
Method	UXOLab
Dynamic Data	None
Cued Data	MetalMapper
Training Set	Custom
Stage	2
Version	1

Target ID:	Category: -1 = Training Set 0 = Can't Extract Reliable Parameters 1 = Likely TOI 2 = Can't Decide 3 = Likely Non-TOI	Dig Decision: 1 = Dig 0 = Don't Dig	TOI Size Band: (diameter in mm) 1 = diam < 50 mm 2 = 50 < diam < 100 3 = diam > 100 mm (Leave blank for Dig Decision = 0)
FO-50021	-1	1	3
FO-30347	-1	1	3
FO-20145	-1	1	3
FO-20001	-1	1	3
FO-30298	-1	1	3
FO-50103	-1	1	3
FO-50075	-1	1	3
FO-20018	-1	1	3
FO-50072	-1	1	3
FO-25047	-1	1	3
FO-30035	-1	1	3
FO-35135	-1	1	3
FO-40264	-1	1	3
FO-30050	-1	1	3
FO-35056	-1	1	3
FO-35054	-1	1	3
FO-25058	-1	1	3
FO-20010	-1	1	3
FO-10051	-1	1	3
FO-30192	-1	1	3
FO-30521	-1	1	3
FO-30094	-1	1	3
FO-30289	-1	1	3
FO-30025	-1	1	3
FO-10142	-1	1	3
FO-20672	-1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10183	-1	1	3
FO-10227	-1	1	3
FO-40575	-1	1	3
FO-20229	-1	1	3
FO-10023	-1	1	3
FO-30010	-1	1	3
FO-40513	-1	1	3
FO-50085	-1	1	3
FO-11312	-1	1	3
FO-10003	-1	1	3
FO-40246	-1	1	3
FO-20071	-1	1	3
FO-20513	-1	1	3
FO-35555	-1	1	3
FO-10237	-1	1	3
FO-10240	-1	1	3
FO-40058	-1	1	3
FO-10028	-1	1	3
FO-35487	-1	1	3
FO-10075	-1	1	3
FO-41108	-1	1	3
FO-10219	-1	1	3
FO-40176	-1	1	3
FO-10280	-1	1	3
FO-10114	-1	1	3
FO-10073	-1	1	3
FO-10149	-1	1	3
FO-10392	-1	1	3
FO-10563	-1	1	3
FO-20129	-1	1	3
FO-40191	-1	1	3
FO-10905	-1	1	3
FO-11361	-1	1	3
FO-10284	-1	1	3
FO-11245	-1	1	3
FO-36056	0	1	3
FO-40023	0	1	3
FO-20013	1	1	3
FO-20005	1	1	3
FO-50096	1	1	3
FO-35008	1	1	3
FO-20548	1	1	3
FO-50126	1	1	3
FO-30001	1	1	3
FO-50019	1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-50127	1	1	3
FO-50034	1	1	3
FO-35004	1	1	3
FO-35013	1	1	3
FO-30225	1	1	3
FO-35205	1	1	3
FO-30019	1	1	3
FO-25056	1	1	3
FO-20085	1	1	3
FO-25568	1	1	3
FO-50020	1	1	3
FO-10365	1	1	3
FO-20609	1	1	3
FO-35007	1	1	3
FO-10027	1	1	3
FO-26617	1	1	3
FO-25090	1	1	3
FO-25006	1	1	3
FO-25003	1	1	3
FO-25140	1	1	3
FO-10194	1	1	3
FO-25041	1	1	3
FO-25030	1	1	3
FO-10008	1	1	3
FO-25183	1	1	3
FO-30277	1	1	3
FO-50115	1	1	3
FO-25268	1	1	3
FO-20498	1	1	3
FO-50150	1	1	3
FO-36009	1	1	3
FO-35028	1	1	3
FO-10089	1	1	3
FO-35002	1	1	3
FO-20481	1	1	3
FO-35019	1	1	3
FO-40008	1	1	3
FO-10002	1	1	3
FO-35009	1	1	3
FO-25009	1	1	3
FO-20130	1	1	3
FO-35037	1	1	3
FO-20162	1	1	3
FO-26370	1	1	3
FO-25025	1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20003	1	1	3
FO-35129	1	1	3
FO-35933	1	1	3
FO-20014	1	1	3
FO-50088	1	1	3
FO-35055	1	1	3
FO-35431	1	1	3
FO-36372	1	1	3
FO-36199	1	1	3
FO-20512	1	1	3
FO-20009	1	1	3
FO-30557	1	1	3
FO-30237	1	1	3
FO-50011	1	1	3
FO-20012	1	1	3
FO-50061	1	1	3
FO-50086	1	1	3
FO-50002	1	1	3
FO-11121	1	1	3
FO-20011	1	1	3
FO-10010	1	1	3
FO-20238	1	1	3
FO-50131	1	1	3
FO-25061	1	1	3
FO-20026	1	1	3
FO-30172	1	1	3
FO-10181	1	1	3
FO-50007	1	1	3
FO-30495	1	1	3
FO-30101	1	1	3
FO-25036	1	1	3
FO-20137	1	1	3
FO-35045	1	1	3
FO-25085	1	1	3
FO-20367	1	1	3
FO-30235	1	1	3
FO-20193	1	1	3
FO-30357	1	1	3
FO-20057	1	1	3
FO-50121	1	1	3
FO-30636	1	1	3
FO-30650	1	1	3
FO-30436	1	1	3
FO-30118	1	1	3
FO-30503	1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25002	1	1	3
FO-20550	1	1	3
FO-40135	1	1	3
FO-20002	1	1	3
FO-30627	1	1	3
FO-30363	1	1	3
FO-25131	1	1	3
FO-20272	1	1	3
FO-30441	1	1	3
FO-35824	1	1	3
FO-30616	1	1	3
FO-30611	1	1	3
FO-25324	1	1	3
FO-20406	1	1	3
FO-25171	1	1	3
FO-25179	1	1	3
FO-25037	1	1	3
FO-30352	1	1	3
FO-20158	1	1	3
FO-40002	1	1	3
FO-30345	1	1	3
FO-10025	1	1	3
FO-30620	1	1	3
FO-30249	1	1	3
FO-30646	1	1	3
FO-25062	1	1	3
FO-25038	1	1	3
FO-25206	1	1	3
FO-25340	1	1	3
FO-25020	1	1	3
FO-25068	1	1	3
FO-20224	1	1	3
FO-30344	1	1	3
FO-25024	1	1	3
FO-30399	1	1	3
FO-30504	1	1	3
FO-30294	1	1	3
FO-30107	1	1	3
FO-30032	1	1	3
FO-30430	1	1	3
FO-30089	1	1	3
FO-20015	1	1	3
FO-40113	1	1	3
FO-10201	1	1	3
FO-25713	1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30168	1	1	3
FO-30286	1	1	3
FO-30287	1	1	3
FO-30421	1	1	3
FO-30613	1	1	3
FO-30513	1	1	3
FO-30630	1	1	3
FO-35043	1	1	3
FO-35048	1	1	3
FO-35261	1	1	3
FO-36188	1	1	3
FO-50093	1	1	3
FO-30242	1	1	3
FO-11168	3	1	3
FO-36568	3	1	3
FO-20495	3	1	3
FO-50012	3	1	3
FO-30564	3	1	3
FO-20051	3	1	3
FO-50062	3	1	3
FO-20053	3	1	3
FO-30279	3	1	3
FO-30475	3	1	3
FO-30293	3	1	3
FO-30055	3	1	3
FO-50065	3	1	3
FO-25306	3	1	3
FO-20017	3	1	3
FO-30267	3	1	3
FO-30051	3	1	3
FO-35060	3	1	3
FO-30574	3	1	3
FO-30608	3	1	3
FO-30365	3	1	3
FO-41103	3	1	3
FO-30409	3	1	3
FO-30425	3	1	3
FO-11495	3	1	3
FO-36442	3	1	3
FO-30142	3	1	3
FO-30223	3	1	3
FO-30372	3	1	3
FO-30597	3	1	3
FO-30123	3	1	3
FO-20378	3	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30607	3	1	3
FO-25384	3	1	3
FO-30097	3	1	3
FO-30211	3	1	3
FO-35035	3	1	3
FO-35388	3	1	3
FO-30600	3	1	3
FO-30431	3	1	3
FO-30551	3	1	3
FO-30254	3	1	3
FO-30537	3	1	3
FO-30326	3	1	3
FO-30546	3	1	3
FO-30376	3	1	3
FO-30230	3	1	3
FO-30174	3	1	3
FO-30198	3	1	3
FO-50111	3	1	3
FO-30320	3	1	3
FO-35757	3	1	3
FO-25026	3	1	3
FO-26682	3	1	3
FO-30470	3	1	3
FO-30012	3	1	3
FO-30203	3	0	
FO-20281	3	0	
FO-30410	3	0	
FO-30184	3	0	
FO-30232	3	0	
FO-25487	3	0	
FO-30443	3	0	
FO-30332	3	0	
FO-30605	3	0	
FO-35604	3	0	
FO-30419	3	0	
FO-10510	3	0	
FO-30604	3	0	
FO-30642	3	0	
FO-30042	3	0	
FO-30400	3	0	
FO-30497	3	0	
FO-30610	3	0	
FO-36118	3	0	
FO-30386	3	0	
FO-25064	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20515	3	0	
FO-30591	3	0	
FO-30599	3	0	
FO-30543	3	0	
FO-30368	3	0	
FO-30378	3	0	
FO-30314	3	0	
FO-30181	3	0	
FO-30210	3	0	
FO-30586	3	0	
FO-30429	3	0	
FO-30291	3	0	
FO-30075	3	0	
FO-20059	3	0	
FO-50110	3	0	
FO-40329	3	0	
FO-35041	3	0	
FO-50067	3	0	
FO-35025	3	0	
FO-38465	3	0	
FO-37916	3	0	
FO-35612	3	0	
FO-50038	3	0	
FO-35519	3	0	
FO-30506	3	0	
FO-40106	3	0	
FO-30309	3	0	
FO-35250	3	0	
FO-30544	3	0	
FO-30519	3	0	
FO-30336	3	0	
FO-30367	3	0	
FO-30651	3	0	
FO-30206	3	0	
FO-30556	3	0	
FO-30100	3	0	
FO-30566	3	0	
FO-50025	3	0	
FO-30036	3	0	
FO-30558	3	0	
FO-30180	3	0	
FO-30218	3	0	
FO-20180	3	0	
FO-35034	3	0	
FO-11661	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20257	3	0	
FO-30166	3	0	
FO-20047	3	0	
FO-30373	3	0	
FO-25112	3	0	
FO-20154	3	0	
FO-41396	3	0	
FO-20038	3	0	
FO-30549	3	0	
FO-50087	3	0	
FO-35999	3	0	
FO-30312	3	0	
FO-30426	3	0	
FO-10006	3	0	
FO-35053	3	0	
FO-11471	3	0	
FO-30004	3	0	
FO-30176	3	0	
FO-40033	3	0	
FO-30151	3	0	
FO-40812	3	0	
FO-20032	3	0	
FO-30587	3	0	
FO-30527	3	0	
FO-30526	3	0	
FO-30468	3	0	
FO-50123	3	0	
FO-40044	3	0	
FO-50106	3	0	
FO-30183	3	0	
FO-30234	3	0	
FO-50070	3	0	
FO-20585	3	0	
FO-30079	3	0	
FO-30524	3	0	
FO-30589	3	0	
FO-11374	3	0	
FO-30268	3	0	
FO-30390	3	0	
FO-30252	3	0	
FO-30134	3	0	
FO-30284	3	0	
FO-30264	3	0	
FO-20019	3	0	
FO-30111	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20065	3	0	
FO-30476	3	0	
FO-40213	3	0	
FO-30482	3	0	
FO-40254	3	0	
FO-30265	3	0	
FO-30473	3	0	
FO-30170	3	0	
FO-30478	3	0	
FO-50003	3	0	
FO-30145	3	0	
FO-30219	3	0	
FO-30383	3	0	
FO-30460	3	0	
FO-30602	3	0	
FO-30511	3	0	
FO-30619	3	0	
FO-40117	3	0	
FO-40022	3	0	
FO-30330	3	0	
FO-30162	3	0	
FO-50144	3	0	
FO-20030	3	0	
FO-40208	3	0	
FO-40226	3	0	
FO-30304	3	0	
FO-30550	3	0	
FO-30178	3	0	
FO-50053	3	0	
FO-30139	3	0	
FO-30084	3	0	
FO-30167	3	0	
FO-20028	3	0	
FO-20218	3	0	
FO-20108	3	0	
FO-35280	3	0	
FO-30635	3	0	
FO-30220	3	0	
FO-30308	3	0	
FO-30038	3	0	
FO-30251	3	0	
FO-30149	3	0	
FO-10170	3	0	
FO-40066	3	0	
FO-30585	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30381	3	0	
FO-20305	3	0	
FO-25776	3	0	
FO-40809	3	0	
FO-20103	3	0	
FO-30438	3	0	
FO-30428	3	0	
FO-20021	3	0	
FO-50048	3	0	
FO-30031	3	0	
FO-30572	3	0	
FO-30087	3	0	
FO-30565	3	0	
FO-50143	3	0	
FO-25224	3	0	
FO-30451	3	0	
FO-40005	3	0	
FO-35337	3	0	
FO-50130	3	0	
FO-25091	3	0	
FO-30195	3	0	
FO-30202	3	0	
FO-11638	3	0	
FO-30322	3	0	
FO-20157	3	0	
FO-27231	3	0	
FO-40255	3	0	
FO-30323	3	0	
FO-30058	3	0	
FO-30337	3	0	
FO-11673	3	0	
FO-30261	3	0	
FO-50063	3	0	
FO-30459	3	0	
FO-30626	3	0	
FO-30085	3	0	
FO-20163	3	0	
FO-30292	3	0	
FO-20181	3	0	
FO-50102	3	0	
FO-30187	3	0	
FO-27328	3	0	
FO-35365	3	0	
FO-50107	3	0	
FO-30328	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25203	3	0	
FO-30530	3	0	
FO-30175	3	0	
FO-30364	3	0	
FO-50055	3	0	
FO-35068	3	0	
FO-30601	3	0	
FO-30535	3	0	
FO-30193	3	0	
FO-30209	3	0	
FO-30437	3	0	
FO-35066	3	0	
FO-30609	3	0	
FO-41003	3	0	
FO-20046	3	0	
FO-30047	3	0	
FO-25067	3	0	
FO-30122	3	0	
FO-30276	3	0	
FO-26827	3	0	
FO-50006	3	0	
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FO-10116	3	0	
FO-30528	3	0	
FO-30516	3	0	
FO-40710	3	0	
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FO-30571	3	0	
FO-30169	3	0	
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FO-30449	3	0	
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FO-30059	3	0	
FO-20142	3	0	
FO-30489	3	0	
FO-30418	3	0	
FO-30060	3	0	
FO-35020	3	0	
FO-30160	3	0	
FO-30529	3	0	
FO-30483	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30028	3	0	
FO-30339	3	0	
FO-35260	3	0	
FO-50045	3	0	
FO-50137	3	0	
FO-27151	3	0	
FO-35156	3	0	
FO-30290	3	0	
FO-30563	3	0	
FO-35180	3	0	
FO-20243	3	0	
FO-30637	3	0	
FO-35016	3	0	
FO-30648	3	0	
FO-30015	3	0	
FO-30548	3	0	
FO-30356	3	0	
FO-30222	3	0	
FO-10058	3	0	
FO-25076	3	0	
FO-30540	3	0	
FO-30584	3	0	
FO-20250	3	0	
FO-30445	3	0	
FO-30281	3	0	
FO-30369	3	0	
FO-30615	3	0	
FO-30580	3	0	
FO-40182	3	0	
FO-35197	3	0	
FO-30081	3	0	
FO-30413	3	0	
FO-25977	3	0	
FO-20206	3	0	
FO-30310	3	0	
FO-30136	3	0	
FO-25105	3	0	
FO-20232	3	0	
FO-20441	3	0	
FO-30405	3	0	
FO-50135	3	0	
FO-35910	3	0	
FO-50098	3	0	
FO-30422	3	0	
FO-30311	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20591	3	0	
FO-30229	3	0	
FO-11246	3	0	
FO-20309	3	0	
FO-30629	3	0	
FO-30258	3	0	
FO-10753	3	0	
FO-25225	3	0	
FO-35003	3	0	
FO-30652	3	0	
FO-30002	3	0	
FO-30247	3	0	
FO-30351	3	0	
FO-20371	3	0	
FO-20042	3	0	
FO-30215	3	0	
FO-41137	3	0	
FO-25052	3	0	
FO-30008	3	0	
FO-30423	3	0	
FO-30592	3	0	
FO-20270	3	0	
FO-50133	3	0	
FO-50094	3	0	
FO-50082	3	0	
FO-40014	3	0	
FO-41038	3	0	
FO-30639	3	0	
FO-30190	3	0	
FO-25202	3	0	
FO-50119	3	0	
FO-35012	3	0	
FO-50064	3	0	
FO-25533	3	0	
FO-20007	3	0	
FO-40228	3	0	
FO-41229	3	0	
FO-30238	3	0	
FO-35319	3	0	
FO-11541	3	0	
FO-20055	3	0	
FO-25132	3	0	
FO-25098	3	0	
FO-30621	3	0	
FO-20353	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30361	3	0	
FO-30623	3	0	
FO-20284	3	0	
FO-30393	3	0	
FO-20404	3	0	
FO-30271	3	0	
FO-30471	3	0	
FO-30266	3	0	
FO-50041	3	0	
FO-40579	3	0	
FO-30579	3	0	
FO-50074	3	0	
FO-50015	3	0	
FO-41281	3	0	
FO-30614	3	0	
FO-30053	3	0	
FO-20082	3	0	
FO-30255	3	0	
FO-50054	3	0	
FO-10174	3	0	
FO-30457	3	0	
FO-20403	3	0	
FO-30415	3	0	
FO-30561	3	0	
FO-50077	3	0	
FO-40038	3	0	
FO-40088	3	0	
FO-30102	3	0	
FO-41626	3	0	
FO-20093	3	0	
FO-20255	3	0	
FO-30065	3	0	
FO-30315	3	0	
FO-30501	3	0	
FO-11610	3	0	
FO-36241	3	0	
FO-20517	3	0	
FO-20141	3	0	
FO-30472	3	0	
FO-20016	3	0	
FO-35334	3	0	
FO-30446	3	0	
FO-30499	3	0	
FO-11546	3	0	
FO-25053	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30401	3	0	
FO-30080	3	0	
FO-50112	3	0	
FO-30302	3	0	
FO-25970	3	0	
FO-30016	3	0	
FO-30440	3	0	
FO-20684	3	0	
FO-50109	3	0	
FO-50027	3	0	
FO-40436	3	0	
FO-10436	3	0	
FO-30240	3	0	
FO-25168	3	0	
FO-40032	3	0	
FO-30040	3	0	
FO-20354	3	0	
FO-35143	3	0	
FO-20190	3	0	
FO-35217	3	0	
FO-10549	3	0	
FO-50073	3	0	
FO-30508	3	0	
FO-20588	3	0	
FO-30052	3	0	
FO-30135	3	0	
FO-40885	3	0	
FO-50120	3	0	
FO-30412	3	0	
FO-30453	3	0	
FO-35018	3	0	
FO-30017	3	0	
FO-35039	3	0	
FO-30023	3	0	
FO-30567	3	0	
FO-10077	3	0	
FO-25142	3	0	
FO-25118	3	0	
FO-30127	3	0	
FO-30048	3	0	
FO-30498	3	0	
FO-30161	3	0	
FO-37820	3	0	
FO-50097	3	0	
FO-35543	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20336	3	0	
FO-20115	3	0	
FO-25123	3	0	
FO-30509	3	0	
FO-30354	3	0	
FO-20485	3	0	
FO-30371	3	0	
FO-30502	3	0	
FO-20118	3	0	
FO-10890	3	0	
FO-50117	3	0	
FO-10056	3	0	
FO-50071	3	0	
FO-20744	3	0	
FO-25073	3	0	
FO-50051	3	0	
FO-26490	3	0	
FO-25129	3	0	
FO-30072	3	0	
FO-50139	3	0	
FO-30583	3	0	
FO-25066	3	0	
FO-30622	3	0	
FO-35042	3	0	
FO-30034	3	0	
FO-30239	3	0	
FO-20350	3	0	
FO-20230	3	0	
FO-30109	3	0	
FO-30417	3	0	
FO-30103	3	0	
FO-40035	3	0	
FO-30578	3	0	
FO-20296	3	0	
FO-50044	3	0	
FO-50078	3	0	
FO-50043	3	0	
FO-50092	3	0	
FO-50125	3	0	
FO-50148	3	0	
FO-35558	3	0	
FO-30022	3	0	
FO-30596	3	0	
FO-40377	3	0	
FO-20025	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30307	3	0	
FO-40459	3	0	
FO-25649	3	0	
FO-50057	3	0	
FO-35194	3	0	
FO-50076	3	0	
FO-30147	3	0	
FO-25045	3	0	
FO-25040	3	0	
FO-20786	3	0	
FO-30207	3	0	
FO-30569	3	0	
FO-35446	3	0	
FO-35014	3	0	
FO-20254	3	0	
FO-35158	3	0	
FO-30248	3	0	
FO-30485	3	0	
FO-30402	3	0	
FO-10099	3	0	
FO-36640	3	0	
FO-30353	3	0	
FO-50149	3	0	
FO-20479	3	0	
FO-30108	3	0	
FO-30088	3	0	
FO-35089	3	0	
FO-41498	3	0	
FO-50079	3	0	
FO-20783	3	0	
FO-30444	3	0	
FO-37409	3	0	
FO-41303	3	0	
FO-30112	3	0	
FO-35218	3	0	
FO-30021	3	0	
FO-20004	3	0	
FO-30158	3	0	
FO-25081	3	0	
FO-20165	3	0	
FO-50042	3	0	
FO-40972	3	0	
FO-10014	3	0	
FO-41672	3	0	
FO-41361	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20706	3	0	
FO-40207	3	0	
FO-20302	3	0	
FO-25358	3	0	
FO-41105	3	0	
FO-50018	3	0	
FO-50024	3	0	
FO-40029	3	0	
FO-20027	3	0	
FO-20408	3	0	
FO-30624	3	0	
FO-41104	3	0	
FO-10063	3	0	
FO-10013	3	0	
FO-50090	3	0	
FO-40001	3	0	
FO-30305	3	0	
FO-50108	3	0	
FO-40608	3	0	
FO-25078	3	0	
FO-30196	3	0	
FO-30300	3	0	
FO-40027	3	0	
FO-50022	3	0	
FO-10061	3	0	
FO-35731	3	0	
FO-30186	3	0	
FO-50068	3	0	
FO-50146	3	0	
FO-50010	3	0	
FO-10012	3	0	
FO-30074	3	0	
FO-20566	3	0	
FO-30633	3	0	
FO-30617	3	0	
FO-30105	3	0	
FO-20313	3	0	
FO-30096	3	0	
FO-40086	3	0	
FO-11339	3	0	
FO-41388	3	0	
FO-20612	3	0	
FO-35024	3	0	
FO-25109	3	0	
FO-50138	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30447	3	0	
FO-20621	3	0	
FO-30260	3	0	
FO-30144	3	0	
FO-20164	3	0	
FO-30106	3	0	
FO-35029	3	0	
FO-20624	3	0	
FO-35051	3	0	
FO-30026	3	0	
FO-30295	3	0	
FO-25077	3	0	
FO-20283	3	0	
FO-30129	3	0	
FO-37433	3	0	
FO-30070	3	0	
FO-30257	3	0	
FO-35240	3	0	
FO-20774	3	0	
FO-40124	3	0	
FO-10124	3	0	
FO-11164	3	0	
FO-20604	3	0	
FO-40153	3	0	
FO-20248	3	0	
FO-30319	3	0	
FO-30491	3	0	
FO-30481	3	0	
FO-20170	3	0	
FO-30143	3	0	
FO-30006	3	0	
FO-50049	3	0	
FO-50129	3	0	
FO-41360	3	0	
FO-20437	3	0	
FO-20352	3	0	
FO-40204	3	0	
FO-30382	3	0	
FO-40151	3	0	
FO-30395	3	0	
FO-40019	3	0	
FO-30217	3	0	
FO-20717	3	0	
FO-20282	3	0	
FO-28076	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20176	3	0	
FO-50099	3	0	
FO-25042	3	0	
FO-50033	3	0	
FO-30341	3	0	
FO-50005	3	0	
FO-20526	3	0	
FO-25086	3	0	
FO-20022	3	0	
FO-30194	3	0	
FO-40015	3	0	
FO-30068	3	0	
FO-35021	3	0	
FO-35104	3	0	
FO-50036	3	0	
FO-20139	3	0	
FO-30005	3	0	
FO-20414	3	0	
FO-40025	3	0	
FO-50050	3	0	
FO-30150	3	0	
FO-30140	3	0	
FO-50145	3	0	
FO-20540	3	0	
FO-30434	3	0	
FO-30013	3	0	
FO-30121	3	0	
FO-40012	3	0	
FO-50105	3	0	
FO-20268	3	0	
FO-11332	3	0	
FO-50069	3	0	
FO-50080	3	0	
FO-50084	3	0	
FO-50014	3	0	
FO-20535	3	0	
FO-25013	3	0	
FO-20531	3	0	
FO-11474	3	0	
FO-20036	3	0	
FO-35083	3	0	
FO-30228	3	0	
FO-40009	3	0	
FO-30359	3	0	
FO-40956	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35137	3	0	
FO-10074	3	0	
FO-20419	3	0	
FO-26675	3	0	
FO-20217	3	0	
FO-25088	3	0	
FO-20562	3	0	
FO-20486	3	0	
FO-20153	3	0	
FO-30463	3	0	
FO-20516	3	0	
FO-20499	3	0	
FO-20185	3	0	
FO-20307	3	0	
FO-20582	3	0	
FO-20689	3	0	
FO-30392	3	0	
FO-30573	3	0	
FO-25128	3	0	
FO-30282	3	0	
FO-20713	3	0	
FO-40302	3	0	
FO-50016	3	0	
FO-40408	3	0	
FO-20169	3	0	
FO-30092	3	0	
FO-35522	3	0	
FO-20134	3	0	
FO-50008	3	0	
FO-40006	3	0	
FO-41376	3	0	
FO-11776	3	0	
FO-20200	3	0	
FO-20578	3	0	
FO-20663	3	0	
FO-20649	3	0	
FO-20446	3	0	
FO-41164	3	0	
FO-25900	3	0	
FO-30603	3	0	
FO-30275	3	0	
FO-20467	3	0	
FO-20549	3	0	
FO-30227	3	0	
FO-40810	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25089	3	0	
FO-20159	3	0	
FO-20395	3	0	
FO-30011	3	0	
FO-20658	3	0	
FO-20764	3	0	
FO-20448	3	0	
FO-30280	3	0	
FO-10260	3	0	
FO-20031	3	0	
FO-50122	3	0	
FO-20466	3	0	
FO-35059	3	0	
FO-35038	3	0	
FO-30273	3	0	
FO-30420	3	0	
FO-10768	3	0	
FO-40034	3	0	
FO-20389	3	0	
FO-50104	3	0	
FO-20460	3	0	
FO-20700	3	0	
FO-30598	3	0	
FO-30532	3	0	
FO-41598	3	0	
FO-30560	3	0	
FO-10001	3	0	
FO-25392	3	0	
FO-40021	3	0	
FO-25022	3	0	
FO-50081	3	0	
FO-20756	3	0	
FO-20008	3	0	
FO-20168	3	0	
FO-50028	3	0	
FO-20673	3	0	
FO-30403	3	0	
FO-20023	3	0	
FO-30374	3	0	
FO-11449	3	0	
FO-20472	3	0	
FO-30125	3	0	
FO-20029	3	0	
FO-30479	3	0	
FO-20664	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35359	3	0	
FO-26707	3	0	
FO-30514	3	0	
FO-30539	3	0	
FO-20424	3	0	
FO-50091	3	0	
FO-50147	3	0	
FO-20306	3	0	
FO-41166	3	0	
FO-40706	3	0	
FO-20104	3	0	
FO-30570	3	0	
FO-30278	3	0	
FO-20534	3	0	
FO-20693	3	0	
FO-40536	3	0	
FO-50140	3	0	
FO-11726	3	0	
FO-37406	3	0	
FO-20239	3	0	
FO-20318	3	0	
FO-30062	3	0	
FO-20024	3	0	
FO-20144	3	0	
FO-40037	3	0	
FO-20610	3	0	
FO-20631	3	0	
FO-40016	3	0	
FO-20177	3	0	
FO-11203	3	0	
FO-50009	3	0	
FO-40454	3	0	
FO-10327	3	0	
FO-35212	3	0	
FO-35465	3	0	
FO-20773	3	0	
FO-20316	3	0	
FO-10150	3	0	
FO-30641	3	0	
FO-20753	3	0	
FO-20558	3	0	
FO-20587	3	0	
FO-20647	3	0	
FO-10009	3	0	
FO-30517	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20440	3	0	
FO-50114	3	0	
FO-20576	3	0	
FO-20041	3	0	
FO-27149	3	0	
FO-20095	3	0	
FO-40552	3	0	
FO-30385	3	0	
FO-50032	3	0	
FO-40474	3	0	
FO-30188	3	0	
FO-50039	3	0	
FO-10481	3	0	
FO-20113	3	0	
FO-20502	3	0	
FO-20497	3	0	
FO-50118	3	0	
FO-20194	3	0	
FO-40007	3	0	
FO-20372	3	0	
FO-30342	3	0	
FO-20686	3	0	
FO-20553	3	0	
FO-20151	3	0	
FO-40325	3	0	
FO-40324	3	0	
FO-20266	3	0	
FO-20221	3	0	
FO-30523	3	0	
FO-25380	3	0	
FO-35285	3	0	
FO-40133	3	0	
FO-20539	3	0	
FO-35417	3	0	
FO-20675	3	0	
FO-30404	3	0	
FO-20679	3	0	
FO-30628	3	0	
FO-40071	3	0	
FO-20761	3	0	
FO-40013	3	0	
FO-20094	3	0	
FO-30132	3	0	
FO-20125	3	0	
FO-50031	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40017	3	0	
FO-20501	3	0	
FO-30594	3	0	
FO-36471	3	0	
FO-40593	3	0	
FO-20452	3	0	
FO-50136	3	0	
FO-10214	3	0	
FO-20504	3	0	
FO-20251	3	0	
FO-20450	3	0	
FO-40985	3	0	
FO-20454	3	0	
FO-30212	3	0	
FO-35023	3	0	
FO-20763	3	0	
FO-30542	3	0	
FO-20487	3	0	
FO-20542	3	0	
FO-20388	3	0	
FO-50128	3	0	
FO-30077	3	0	
FO-20538	3	0	
FO-30640	3	0	
FO-20435	3	0	
FO-20598	3	0	
FO-30117	3	0	
FO-50134	3	0	
FO-20586	3	0	
FO-35620	3	0	
FO-20696	3	0	
FO-20099	3	0	
FO-11317	3	0	
FO-50052	3	0	
FO-11539	3	0	
FO-30236	3	0	
FO-20439	3	0	
FO-20037	3	0	
FO-20430	3	0	
FO-30045	3	0	
FO-20366	3	0	
FO-20666	3	0	
FO-50066	3	0	
FO-20543	3	0	
FO-11457	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20652	3	0	
FO-20482	3	0	
FO-10374	3	0	
FO-20368	3	0	
FO-50013	3	0	
FO-40028	3	0	
FO-20603	3	0	
FO-20121	3	0	
FO-20765	3	0	
FO-37157	3	0	
FO-20639	3	0	
FO-40018	3	0	
FO-20415	3	0	
FO-20035	3	0	
FO-50142	3	0	
FO-20757	3	0	
FO-50083	3	0	
FO-30191	3	0	
FO-20545	3	0	
FO-30486	3	0	
FO-30313	3	0	
FO-30366	3	0	
FO-20189	3	0	
FO-20091	3	0	
FO-35105	3	0	
FO-40011	3	0	
FO-20708	3	0	
FO-20599	3	0	
FO-20100	3	0	
FO-20112	3	0	
FO-20653	3	0	
FO-10429	3	0	
FO-20317	3	0	
FO-10157	3	0	
FO-20699	3	0	
FO-30099	3	0	
FO-10787	3	0	
FO-25189	3	0	
FO-20173	3	0	
FO-20622	3	0	
FO-40367	3	0	
FO-30153	3	0	
FO-20312	3	0	
FO-11357	3	0	
FO-35098	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30066	3	0	
FO-20150	3	0	
FO-35244	3	0	
FO-30224	3	0	
FO-30492	3	0	
FO-30377	3	0	
FO-20434	3	0	
FO-20241	3	0	
FO-20522	3	0	
FO-20087	3	0	
FO-20572	3	0	
FO-30435	3	0	
FO-40778	3	0	
FO-50017	3	0	
FO-20331	3	0	
FO-30189	3	0	
FO-20691	3	0	
FO-20707	3	0	
FO-30163	3	0	
FO-20390	3	0	
FO-26862	3	0	
FO-30634	3	0	
FO-20187	3	0	
FO-25146	3	0	
FO-20732	3	0	
FO-20399	3	0	
FO-20661	3	0	
FO-35436	3	0	
FO-20259	3	0	
FO-20407	3	0	
FO-20701	3	0	
FO-20510	3	0	
FO-30387	3	0	
FO-30306	3	0	
FO-30182	3	0	
FO-20477	3	0	
FO-20293	3	0	
FO-40376	3	0	
FO-30490	3	0	
FO-20276	3	0	
FO-20626	3	0	
FO-20768	3	0	
FO-10718	3	0	
FO-20362	3	0	
FO-20132	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30204	3	0	
FO-30559	3	0	
FO-20228	3	0	
FO-20314	3	0	
FO-20665	3	0	
FO-40227	3	0	
FO-30547	3	0	
FO-20252	3	0	
FO-30056	3	0	
FO-30133	3	0	
FO-20253	3	0	
FO-20682	3	0	
FO-20560	3	0	
FO-20676	3	0	
FO-20152	3	0	
FO-30346	3	0	
FO-30044	3	0	
FO-41321	3	0	
FO-30333	3	0	
FO-35094	3	0	
FO-20119	3	0	
FO-20521	3	0	
FO-11544	3	0	
FO-30201	3	0	
FO-20120	3	0	
FO-20211	3	0	
FO-30505	3	0	
FO-20384	3	0	
FO-20628	3	0	
FO-30500	3	0	
FO-20126	3	0	
FO-30638	3	0	
FO-20203	3	0	
FO-20396	3	0	
FO-30020	3	0	
FO-30510	3	0	
FO-50101	3	0	
FO-20425	3	0	
FO-30037	3	0	
FO-20186	3	0	
FO-11681	3	0	
FO-40337	3	0	
FO-10015	3	0	
FO-30612	3	0	
FO-20473	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20750	3	0	
FO-20680	3	0	
FO-20530	3	0	
FO-20703	3	0	
FO-30208	3	0	
FO-20365	3	0	
FO-20644	3	0	
FO-30477	3	0	
FO-20394	3	0	
FO-20208	3	0	
FO-20681	3	0	
FO-20131	3	0	
FO-10079	3	0	
FO-20264	3	0	
FO-20552	3	0	
FO-30256	3	0	
FO-30165	3	0	
FO-40200	3	0	
FO-36051	3	0	
FO-20370	3	0	
FO-20646	3	0	
FO-30362	3	0	
FO-20762	3	0	
FO-20698	3	0	
FO-20491	3	0	
FO-20069	3	0	
FO-20574	3	0	
FO-20231	3	0	
FO-20669	3	0	
FO-10232	3	0	
FO-20269	3	0	
FO-40157	3	0	
FO-11065	3	0	
FO-20561	3	0	
FO-20387	3	0	
FO-30455	3	0	
FO-40024	3	0	
FO-20342	3	0	
FO-20483	3	0	
FO-20651	3	0	
FO-30394	3	0	
FO-20749	3	0	
FO-20606	3	0	
FO-20659	3	0	
FO-35462	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20197	3	0	
FO-20630	3	0	
FO-20443	3	0	
FO-20627	3	0	
FO-20596	3	0	
FO-10309	3	0	
FO-20299	3	0	
FO-10533	3	0	
FO-30487	3	0	
FO-25069	3	0	
FO-20088	3	0	
FO-10203	3	0	
FO-20721	3	0	
FO-50100	3	0	
FO-20044	3	0	
FO-50132	3	0	
FO-40031	3	0	
FO-20006	3	0	
FO-20315	3	0	
FO-20074	3	0	
FO-20475	3	0	
FO-30590	3	0	
FO-20657	3	0	
FO-20729	3	0	
FO-20704	3	0	
FO-11265	3	0	
FO-20054	3	0	
FO-30069	3	0	
FO-30221	3	0	
FO-20033	3	0	
FO-20263	3	0	
FO-40655	3	0	
FO-30119	3	0	
FO-37278	3	0	
FO-20568	3	0	
FO-35114	3	0	
FO-10798	3	0	
FO-20632	3	0	
FO-20343	3	0	
FO-35150	3	0	
FO-20564	3	0	
FO-30083	3	0	
FO-50029	3	0	
FO-30522	3	0	
FO-20216	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10476	3	0	
FO-20348	3	0	
FO-30014	3	0	
FO-40877	3	0	
FO-40243	3	0	
FO-30538	3	0	
FO-20607	3	0	
FO-20519	3	0	
FO-41622	3	0	
FO-35908	3	0	
FO-50004	3	0	
FO-20740	3	0	
FO-30288	3	0	
FO-30464	3	0	
FO-20739	3	0	
FO-20391	3	0	
FO-10117	3	0	
FO-41252	3	0	
FO-20766	3	0	
FO-30414	3	0	
FO-20326	3	0	
FO-20077	3	0	
FO-11487	3	0	
FO-30375	3	0	
FO-20462	3	0	
FO-40333	3	0	
FO-20128	3	0	
FO-10407	3	0	
FO-30396	3	0	
FO-50035	3	0	
FO-20789	3	0	
FO-30338	3	0	
FO-30340	3	0	
FO-20445	3	0	
FO-20227	3	0	
FO-20140	3	0	
FO-25596	3	0	
FO-20595	3	0	
FO-30007	3	0	
FO-25046	3	0	
FO-20733	3	0	
FO-20618	3	0	
FO-50001	3	0	
FO-20079	3	0	
FO-25295	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20219	3	0	
FO-20730	3	0	
FO-30595	3	0	
FO-20690	3	0	
FO-30171	3	0	
FO-30452	3	0	
FO-35614	3	0	
FO-35356	3	0	
FO-20356	3	0	
FO-30588	3	0	
FO-20742	3	0	
FO-20670	3	0	
FO-11608	3	0	
FO-20067	3	0	
FO-30335	3	0	
FO-20327	3	0	
FO-20685	3	0	
FO-30480	3	0	
FO-20710	3	0	
FO-30131	3	0	
FO-20402	3	0	
FO-25135	3	0	
FO-20528	3	0	
FO-20776	3	0	
FO-30448	3	0	
FO-30130	3	0	
FO-20210	3	0	
FO-20709	3	0	
FO-20623	3	0	
FO-30469	3	0	
FO-20597	3	0	
FO-20246	3	0	
FO-30350	3	0	
FO-20559	3	0	
FO-30349	3	0	
FO-30126	3	0	
FO-20220	3	0	
FO-20583	3	0	
FO-20784	3	0	
FO-30384	3	0	
FO-30461	3	0	
FO-20683	3	0	
FO-20478	3	0	
FO-50056	3	0	
FO-35288	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40020	3	0	
FO-41260	3	0	
FO-20432	3	0	
FO-20541	3	0	
FO-10016	3	0	
FO-20056	3	0	
FO-20667	3	0	
FO-40049	3	0	
FO-20613	3	0	
FO-20295	3	0	
FO-20097	3	0	
FO-20734	3	0	
FO-20416	3	0	
FO-20223	3	0	
FO-30226	3	0	
FO-20062	3	0	
FO-20265	3	0	
FO-30465	3	0	
FO-20511	3	0	
FO-20778	3	0	
FO-30325	3	0	
FO-20580	3	0	
FO-20311	3	0	
FO-10090	3	0	
FO-30064	3	0	
FO-20397	3	0	
FO-20488	3	0	
FO-20637	3	0	
FO-50095	3	0	
FO-25459	3	0	
FO-10180	3	0	
FO-20563	3	0	
FO-20771	3	0	
FO-26349	3	0	
FO-20114	3	0	
FO-20240	3	0	
FO-20532	3	0	
FO-20174	3	0	
FO-30030	3	0	
FO-10446	3	0	
FO-20274	3	0	
FO-30156	3	0	
FO-30416	3	0	
FO-20412	3	0	
FO-10231	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10388	3	0	
FO-11456	3	0	
FO-20111	3	0	
FO-10059	3	0	
FO-30128	3	0	
FO-35474	3	0	
FO-25346	3	0	
FO-30299	3	0	
FO-30380	3	0	
FO-20308	3	0	
FO-20577	3	0	
FO-20209	3	0	
FO-10007	3	0	
FO-20188	3	0	
FO-20474	3	0	
FO-20605	3	0	
FO-30334	3	0	
FO-20590	3	0	
FO-20780	3	0	
FO-30507	3	0	
FO-20287	3	0	
FO-20341	3	0	
FO-40312	3	0	
FO-20280	3	0	
FO-10547	3	0	
FO-20262	3	0	
FO-20769	3	0	
FO-20034	3	0	
FO-35357	3	0	
FO-30531	3	0	
FO-25021	3	0	
FO-35384	3	0	
FO-20286	3	0	
FO-30076	3	0	
FO-20608	3	0	
FO-20781	3	0	
FO-20225	3	0	
FO-20790	3	0	
FO-25074	3	0	
FO-20565	3	0	
FO-41617	3	0	
FO-20080	3	0	
FO-20468	3	0	
FO-10412	3	0	
FO-20279	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20524	3	0	
FO-30262	3	0	
FO-35010	3	0	
FO-30241	3	0	
FO-30398	3	0	
FO-20453	3	0	
FO-27079	3	0	
FO-20600	3	0	
FO-20702	3	0	
FO-37195	3	0	
FO-20417	3	0	
FO-40451	3	0	
FO-11647	3	0	
FO-38312	3	0	
FO-11213	3	0	
FO-20098	3	0	
FO-25485	3	0	
FO-20213	3	0	
FO-35317	3	0	
FO-36200	3	0	
FO-10091	3	0	
FO-30534	3	0	
FO-20751	3	0	
FO-30649	3	0	
FO-30606	3	0	
FO-10793	3	0	
FO-20724	3	0	
FO-20536	3	0	
FO-20116	3	0	
FO-40907	3	0	
FO-37517	3	0	
FO-20489	3	0	
FO-20668	3	0	
FO-30114	3	0	
FO-30029	3	0	
FO-20748	3	0	
FO-20722	3	0	
FO-25103	3	0	
FO-30631	3	0	
FO-10997	3	0	
FO-20525	3	0	
FO-20431	3	0	
FO-30146	3	0	
FO-20589	3	0	
FO-30046	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20078	3	0	
FO-20355	3	0	
FO-20741	3	0	
FO-35566	3	0	
FO-30442	3	0	
FO-20720	3	0	
FO-41294	3	0	
FO-20492	3	0	
FO-20110	3	0	
FO-20351	3	0	
FO-30231	3	0	
FO-25213	3	0	
FO-40965	3	0	
FO-20738	3	0	
FO-20136	3	0	
FO-41491	3	0	
FO-30003	3	0	
FO-20694	3	0	
FO-20285	3	0	
FO-11740	3	0	
FO-20429	3	0	
FO-20123	3	0	
FO-30269	3	0	
FO-30253	3	0	
FO-20084	3	0	
FO-20718	3	0	
FO-20278	3	0	
FO-50030	3	0	
FO-10634	3	0	
FO-20633	3	0	
FO-36515	3	0	
FO-36013	3	0	
FO-20379	3	0	
FO-40504	3	0	
FO-20423	3	0	
FO-20442	3	0	
FO-10130	3	0	
FO-30581	3	0	
FO-11797	3	0	
FO-20470	3	0	
FO-30360	3	0	
FO-20324	3	0	
FO-20573	3	0	
FO-20086	3	0	
FO-20334	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20332	3	0	
FO-41572	3	0	
FO-20052	3	0	
FO-35451	3	0	
FO-20449	3	0	
FO-20156	3	0	
FO-20687	3	0	
FO-20746	3	0	
FO-30033	3	0	
FO-30154	3	0	
FO-20195	3	0	
FO-30644	3	0	
FO-20304	3	0	
FO-10516	3	0	
FO-10019	3	0	
FO-40785	3	0	
FO-20258	3	0	
FO-20529	3	0	
FO-20146	3	0	
FO-20456	3	0	
FO-20662	3	0	
FO-20638	3	0	
FO-26456	3	0	
FO-20303	3	0	
FO-20290	3	0	
FO-35161	3	0	
FO-30355	3	0	
FO-25094	3	0	
FO-20073	3	0	
FO-20205	3	0	
FO-20076	3	0	
FO-20275	3	0	
FO-10062	3	0	
FO-20480	3	0	
FO-20105	3	0	
FO-26368	3	0	
FO-30090	3	0	
FO-20058	3	0	
FO-20712	3	0	
FO-20359	3	0	
FO-20382	3	0	
FO-30155	3	0	
FO-20614	3	0	
FO-30533	3	0	
FO-30120	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20650	3	0	
FO-40762	3	0	
FO-40673	3	0	
FO-30568	3	0	
FO-30027	3	0	
FO-10263	3	0	
FO-30296	3	0	
FO-20138	3	0	
FO-30358	3	0	
FO-20383	3	0	
FO-20527	3	0	
FO-30063	3	0	
FO-10700	3	0	
FO-20509	3	0	
FO-30179	3	0	
FO-40115	3	0	
FO-41218	3	0	
FO-30316	3	0	
FO-41612	3	0	
FO-20096	3	0	
FO-20655	3	0	
FO-30274	3	0	
FO-40242	3	0	
FO-35030	3	0	
FO-11755	3	0	
FO-20191	3	0	
FO-30329	3	0	
FO-20380	3	0	
FO-20533	3	0	
FO-30137	3	0	
FO-30104	3	0	
FO-20719	3	0	
FO-10283	3	0	
FO-20061	3	0	
FO-20555	3	0	
FO-20090	3	0	
FO-20202	3	0	
FO-35309	3	0	
FO-10088	3	0	
FO-20620	3	0	
FO-50060	3	0	
FO-20571	3	0	
FO-30562	3	0	
FO-20770	3	0	
FO-36198	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10416	3	0	
FO-40062	3	0	
FO-20199	3	0	
FO-50023	3	0	
FO-20754	3	0	
FO-30536	3	0	
FO-20458	3	0	
FO-20772	3	0	
FO-11048	3	0	
FO-30152	3	0	
FO-20433	3	0	
FO-30041	3	0	
FO-30331	3	0	
FO-20629	3	0	
FO-30197	3	0	
FO-20455	3	0	
FO-40040	3	0	
FO-20619	3	0	
FO-20745	3	0	
FO-41635	3	0	
FO-30024	3	0	
FO-20410	3	0	
FO-20715	3	0	
FO-11232	3	0	
FO-25222	3	0	
FO-30324	3	0	
FO-20457	3	0	
FO-10040	3	0	
FO-10958	3	0	
FO-10604	3	0	
FO-20092	3	0	
FO-41123	3	0	
FO-20135	3	0	
FO-20782	3	0	
FO-30246	3	0	
FO-41231	3	0	
FO-20292	3	0	
FO-25416	3	0	
FO-10218	3	0	
FO-20107	3	0	
FO-20155	3	0	
FO-10277	3	0	
FO-10034	3	0	
FO-20330	3	0	
FO-30148	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20345	3	0	
FO-30653	3	0	
FO-20447	3	0	
FO-10497	3	0	
FO-20636	3	0	
FO-36022	3	0	
FO-20347	3	0	
FO-30407	3	0	
FO-40041	3	0	
FO-20288	3	0	
FO-20625	3	0	
FO-30245	3	0	
FO-20171	3	0	
FO-20364	3	0	
FO-30496	3	0	
FO-30297	3	0	
FO-20677	3	0	
FO-20244	3	0	
FO-20459	3	0	
FO-35195	3	0	
FO-25703	3	0	
FO-40636	3	0	
FO-20426	3	0	
FO-10719	3	0	
FO-30317	3	0	
FO-40928	3	0	
FO-20735	3	0	
FO-11662	3	0	
FO-40973	3	0	
FO-20409	3	0	
FO-35109	3	0	
FO-20436	3	0	
FO-20297	3	0	
FO-25145	3	0	
FO-11578	3	0	
FO-20654	3	0	
FO-30321	3	0	
FO-30494	3	0	
FO-20214	3	0	
FO-20182	3	0	
FO-10286	3	0	
FO-20551	3	0	
FO-20175	3	0	
FO-30439	3	0	
FO-10064	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10029	3	0	
FO-30039	3	0	
FO-25178	3	0	
FO-20714	3	0	
FO-40052	3	0	
FO-11877	3	0	
FO-30456	3	0	
FO-20428	3	0	
FO-20235	3	0	
FO-20755	3	0	
FO-20329	3	0	
FO-20358	3	0	
FO-20369	3	0	
FO-20043	3	0	
FO-30285	3	0	
FO-30458	3	0	
FO-20212	3	0	
FO-20438	3	0	
FO-40168	3	0	
FO-11241	3	0	
FO-20660	3	0	
FO-20298	3	0	
FO-20500	3	0	
FO-20464	3	0	
FO-20547	3	0	
FO-20183	3	0	
FO-20546	3	0	
FO-35165	3	0	
FO-20020	3	0	
FO-30582	3	0	
FO-25138	3	0	
FO-30541	3	0	
FO-20476	3	0	
FO-26284	3	0	
FO-20301	3	0	
FO-40132	3	0	
FO-11349	3	0	
FO-10959	3	0	
FO-36563	3	0	
FO-35296	3	0	
FO-20747	3	0	
FO-20411	3	0	
FO-25612	3	0	
FO-20261	3	0	
FO-25323	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-36321	3	0	
FO-20422	3	0	
FO-20198	3	0	
FO-30370	3	0	
FO-20759	3	0	
FO-10382	3	0	
FO-30327	3	0	
FO-10193	3	0	
FO-41232	3	0	
FO-20344	3	0	
FO-30116	3	0	
FO-50037	3	0	
FO-30110	3	0	
FO-30518	3	0	
FO-20160	3	0	
FO-30625	3	0	
FO-20117	3	0	
FO-20775	3	0	
FO-20245	3	0	
FO-20716	3	0	
FO-10437	3	0	
FO-20760	3	0	
FO-10564	3	0	
FO-35088	3	0	
FO-30466	3	0	
FO-11005	3	0	
FO-30645	3	0	
FO-20695	3	0	
FO-10809	3	0	
FO-10045	3	0	
FO-10238	3	0	
FO-30575	3	0	
FO-20602	3	0	
FO-11119	3	0	
FO-20192	3	0	
FO-40119	3	0	
FO-20357	3	0	
FO-20147	3	0	
FO-20101	3	0	
FO-10499	3	0	
FO-30647	3	0	
FO-40094	3	0	
FO-20398	3	0	
FO-11702	3	0	
FO-30577	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40289	3	0	
FO-20471	3	0	
FO-10738	3	0	
FO-20726	3	0	
FO-41560	3	0	
FO-20040	3	0	
FO-30318	3	0	
FO-35608	3	0	
FO-20201	3	0	
FO-30138	3	0	
FO-30432	3	0	
FO-50040	3	0	
FO-10443	3	0	
FO-26779	3	0	
FO-20381	3	0	
FO-30389	3	0	
FO-41051	3	0	
FO-40131	3	0	
FO-40069	3	0	
FO-41221	3	0	
FO-11162	3	0	
FO-11864	3	0	
FO-40521	3	0	
FO-25230	3	0	
FO-41069	3	0	
FO-20537	3	0	
FO-20363	3	0	
FO-25607	3	0	
FO-30593	3	0	
FO-11058	3	0	
FO-35565	3	0	
FO-40195	3	0	
FO-30493	3	0	
FO-20196	3	0	
FO-40799	3	0	
FO-30214	3	0	
FO-20575	3	0	
FO-20601	3	0	
FO-20233	3	0	
FO-30525	3	0	
FO-20338	3	0	
FO-20083	3	0	
FO-20593	3	0	
FO-20506	3	0	
FO-30233	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35796	3	0	
FO-50046	3	0	
FO-20496	3	0	
FO-30270	3	0	
FO-20102	3	0	
FO-20385	3	0	
FO-41457	3	0	
FO-30520	3	0	
FO-20089	3	0	
FO-41223	3	0	
FO-10076	3	0	
FO-27932	3	0	
FO-20648	3	0	
FO-30303	3	0	
FO-20222	3	0	
FO-20249	3	0	
FO-30071	3	0	
FO-20503	3	0	
FO-11689	3	0	
FO-30263	3	0	
FO-30348	3	0	
FO-20465	3	0	
FO-35170	3	0	
FO-35535	3	0	
FO-20122	3	0	
FO-20068	3	0	
FO-20184	3	0	
FO-20124	3	0	
FO-20635	3	0	
FO-30643	3	0	
FO-30199	3	0	
FO-11087	3	0	
FO-40258	3	0	
FO-20420	3	0	
FO-20723	3	0	
FO-41318	3	0	
FO-30424	3	0	
FO-20143	3	0	
FO-41488	3	0	
FO-10527	3	0	
FO-30454	3	0	
FO-50059	3	0	
FO-35117	3	0	
FO-10292	3	0	
FO-25683	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20779	3	0	
FO-20377	3	0	
FO-20616	3	0	
FO-40796	3	0	
FO-10022	3	0	
FO-20166	3	0	
FO-25362	3	0	
FO-20289	3	0	
FO-50026	3	0	
FO-30009	3	0	
FO-10032	3	0	
FO-20045	3	0	
FO-30173	3	0	
FO-20335	3	0	
FO-30200	3	0	
FO-50089	3	0	
FO-20242	3	0	
FO-11044	3	0	
FO-20273	3	0	
FO-20234	3	0	
FO-10163	3	0	
FO-41002	3	0	
FO-30043	3	0	
FO-11419	3	0	
FO-25476	3	0	
FO-40310	3	0	
FO-25801	3	0	
FO-20060	3	0	
FO-11501	3	0	
FO-11699	3	0	
FO-20066	3	0	
FO-30450	3	0	
FO-30095	3	0	
FO-20291	3	0	
FO-20544	3	0	
FO-41312	3	0	
FO-40606	3	0	
FO-11703	3	0	
FO-10087	3	0	
FO-20161	3	0	
FO-20081	3	0	
FO-35072	3	0	
FO-11657	3	0	
FO-20215	3	0	
FO-30159	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20179	3	0	
FO-35725	3	0	
FO-11092	3	0	
FO-20204	3	0	
FO-30213	3	0	
FO-20518	3	0	
FO-20325	3	0	
FO-20617	3	0	
FO-10020	3	0	
FO-20569	3	0	
FO-40690	3	0	
FO-40073	3	0	
FO-30397	3	0	
FO-20688	3	0	
FO-20493	3	0	
FO-20581	3	0	
FO-40811	3	0	
FO-11279	3	0	
FO-20133	3	0	
FO-20727	3	0	
FO-25343	3	0	
FO-20247	3	0	
FO-20376	3	0	
FO-40970	3	0	
FO-10345	3	0	
FO-40114	3	0	
FO-10531	3	0	
FO-10316	3	0	
FO-40482	3	0	
FO-10041	3	0	
FO-40953	3	0	
FO-10835	3	0	
FO-40570	3	0	
FO-30411	3	0	
FO-11435	3	0	
FO-40716	3	0	
FO-20444	3	0	
FO-20400	3	0	
FO-40945	3	0	
FO-40829	3	0	
FO-30632	3	0	
FO-11344	3	0	
FO-11513	3	0	
FO-20554	3	0	
FO-11303	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30054	3	0	
FO-11352	3	0	
FO-20361	3	0	
FO-30157	3	0	
FO-20584	3	0	
FO-20049	3	0	
FO-10823	3	0	
FO-10049	3	0	
FO-11825	3	0	
FO-41330	3	0	
FO-40760	3	0	
FO-30474	3	0	
FO-11863	3	0	
FO-40239	3	0	
FO-40104	3	0	
FO-26094	3	0	
FO-10048	3	0	
FO-10112	3	0	
FO-25373	3	0	
FO-20393	3	0	
FO-10847	3	0	
FO-40712	3	0	
FO-20490	3	0	
FO-40977	3	0	
FO-20178	3	0	
FO-26162	3	0	
FO-20349	3	0	
FO-11294	3	0	
FO-20063	3	0	
FO-10153	3	0	
FO-20514	3	0	
FO-25530	3	0	
FO-35273	3	0	
FO-41209	3	0	
FO-10396	3	0	
FO-20711	3	0	
FO-10233	3	0	
FO-10030	3	0	
FO-30164	3	0	
FO-20256	3	0	
FO-11725	3	0	
FO-30462	3	0	
FO-35345	3	0	
FO-25484	3	0	
FO-20109	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10765	3	0	
FO-30545	3	0	
FO-25385	3	0	
FO-40099	3	0	
FO-11723	3	0	
FO-20237	3	0	
FO-35099	3	0	
FO-20236	3	0	
FO-40486	3	0	
FO-40171	3	0	
FO-20777	3	0	
FO-10169	3	0	
FO-10992	3	0	
FO-35155	3	0	
FO-10179	3	0	
FO-10389	3	0	
FO-41416	3	0	
FO-11697	3	0	
FO-20469	3	0	
FO-20310	3	0	
FO-40146	3	0	
FO-30515	3	0	
FO-20039	3	0	
FO-40761	3	0	
FO-11282	3	0	
FO-30177	3	0	
FO-40122	3	0	
FO-40185	3	0	
FO-11850	3	0	
FO-40576	3	0	
FO-20494	3	0	
FO-20736	3	0	
FO-20656	3	0	
FO-11569	3	0	
FO-10120	3	0	
FO-20373	3	0	
FO-41399	3	0	
FO-20671	3	0	
FO-11460	3	0	
FO-40080	3	0	
FO-50058	3	0	
FO-30049	3	0	
FO-40857	3	0	
FO-10066	3	0	
FO-30205	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11229	3	0	
FO-20523	3	0	
FO-25427	3	0	
FO-40225	3	0	
FO-41555	3	0	
FO-26014	3	0	
FO-36690	3	0	
FO-10038	3	0	
FO-40046	3	0	
FO-11096	3	0	
FO-10723	3	0	
FO-35453	3	0	
FO-11742	3	0	
FO-40077	3	0	
FO-50113	3	0	
FO-30216	3	0	
FO-10104	3	0	
FO-20705	3	0	
FO-30552	3	0	
FO-27899	3	0	
FO-35790	3	0	
FO-41685	3	0	
FO-25211	3	0	
FO-30244	3	0	
FO-40648	3	0	
FO-20520	3	0	
FO-20319	3	0	
FO-20413	3	0	
FO-20725	3	0	
FO-20567	3	0	
FO-11669	3	0	
FO-20767	3	0	
FO-30113	3	0	
FO-20337	3	0	
FO-30078	3	0	
FO-10818	3	0	
FO-10523	3	0	
FO-41387	3	0	
FO-40581	3	0	
FO-20743	3	0	
FO-30484	3	0	
FO-20557	3	0	
FO-30018	3	0	
FO-11365	3	0	
FO-10144	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-36150	3	0	
FO-40766	3	0	
FO-40248	3	0	
FO-10119	3	0	
FO-41682	3	0	
FO-40141	3	0	
FO-30067	3	0	
FO-20788	3	0	
FO-25403	3	0	
FO-40297	3	0	
FO-10766	3	0	
FO-40392	3	0	
FO-10249	3	0	
FO-41028	3	0	
FO-10805	3	0	
FO-30185	3	0	
FO-11290	3	0	
FO-40546	3	0	
FO-10126	3	0	
FO-30061	3	0	
FO-10239	3	0	
FO-10508	3	0	
FO-40346	3	0	
FO-11138	3	0	
FO-10821	3	0	
FO-20064	3	0	
FO-10255	3	0	
FO-10133	3	0	
FO-10703	3	0	
FO-10754	3	0	
FO-41640	3	0	
FO-35601	3	0	
FO-40904	3	0	
FO-40102	3	0	
FO-20405	3	0	
FO-35242	3	0	
FO-35298	3	0	
FO-20340	3	0	
FO-30082	3	0	
FO-30391	3	0	
FO-20508	3	0	
FO-30124	3	0	
FO-41276	3	0	
FO-40311	3	0	
FO-20271	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20148	3	0	
FO-10924	3	0	
FO-25414	3	0	
FO-20260	3	0	
FO-10577	3	0	
FO-10285	3	0	
FO-10097	3	0	
FO-10018	3	0	
FO-20570	3	0	
FO-40981	3	0	
FO-20072	3	0	
FO-35741	3	0	
FO-20339	3	0	
FO-41253	3	0	
FO-35967	3	0	
FO-10085	3	0	
FO-20556	3	0	
FO-10558	3	0	
FO-10434	3	0	
FO-41326	3	0	
FO-41392	3	0	
FO-11632	3	0	
FO-40065	3	0	
FO-40873	3	0	
FO-41669	3	0	
FO-20075	3	0	
FO-11004	3	0	
FO-10055	3	0	
FO-10442	3	0	
FO-40107	3	0	
FO-20106	3	0	
FO-20167	3	0	
FO-10816	3	0	
FO-30388	3	0	
FO-40723	3	0	
FO-10521	3	0	
FO-20149	3	0	
FO-10052	3	0	
FO-20642	3	0	
FO-10139	3	0	
FO-11649	3	0	
FO-20507	3	0	
FO-30091	3	0	
FO-10570	3	0	
FO-11757	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-41261	3	0	
FO-11410	3	0	
FO-41336	3	0	
FO-11042	3	0	
FO-20277	3	0	
FO-20207	3	0	
FO-20172	3	0	
FO-30098	3	0	
FO-20640	3	0	
FO-10141	3	0	
FO-30576	3	0	
FO-11116	3	0	
FO-20461	3	0	
FO-40210	3	0	
FO-40097	3	0	
FO-41384	3	0	
FO-20048	3	0	
FO-50141	3	0	
FO-20320	3	0	
FO-40665	3	0	
FO-10484	3	0	
FO-40334	3	0	
FO-11063	3	0	
FO-20427	3	0	
FO-10696	3	0	
FO-40075	3	0	
FO-20641	3	0	
FO-10053	3	0	
FO-20594	3	0	
FO-20328	3	0	
FO-10474	3	0	
FO-20785	3	0	
FO-30086	3	0	
FO-50047	3	0	
FO-40866	3	0	
FO-11172	3	0	
FO-10024	3	0	
FO-10820	3	0	
FO-10098	3	0	
FO-10175	3	0	
FO-20579	3	0	
FO-40148	3	0	
FO-41529	3	0	
FO-41441	3	0	
FO-30343	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-41468	3	0	
FO-40804	3	0	
FO-20070	3	0	
FO-40129	3	0	
FO-20360	3	0	
FO-41016	3	0	
FO-41215	3	0	
FO-10072	3	0	
FO-10271	3	0	
FO-40070	3	0	
FO-41586	3	0	
FO-40990	3	0	
FO-10279	3	0	
FO-40091	3	0	
FO-11243	3	0	
FO-10140	3	0	
FO-26026	3	0	
FO-30283	3	0	
FO-10164	3	0	
FO-20127	3	0	
FO-10054	3	0	
FO-40083	3	0	
FO-11831	3	0	
FO-10212	3	0	
FO-11564	3	0	
FO-10916	3	0	
FO-10281	3	0	
FO-20611	3	0	
FO-11237	3	0	
FO-10093	3	0	
FO-40139	3	0	
FO-20294	3	0	
FO-10425	3	0	
FO-20267	3	0	
FO-20333	3	0	
FO-50116	3	0	
FO-25561	3	0	
FO-20421	3	0	
FO-20323	3	0	
FO-11743	3	0	
FO-40092	3	0	
FO-37080	3	0	
FO-37515	3	0	
FO-11037	3	0	
FO-10083	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40294	3	0	
FO-20300	3	0	
FO-20322	3	0	
FO-40190	3	0	
FO-10934	3	0	
FO-20615	3	0	
FO-40903	3	0	
FO-20226	3	0	
FO-11580	3	0	
FO-30093	3	0	
FO-10198	3	0	
FO-10069	3	0	
FO-20752	3	0	
FO-11728	3	0	
FO-11851	3	0	
FO-30141	3	0	
FO-41117	3	0	
FO-10110	3	0	
FO-10758	3	0	
FO-20692	3	0	
FO-40105	3	0	
FO-40930	3	0	
FO-20401	3	0	
FO-10424	3	0	
FO-20592	3	0	
FO-40659	3	0	
FO-10060	3	0	
FO-35367	3	0	
FO-10892	3	0	
FO-11187	3	0	
FO-20374	3	0	
FO-35960	3	0	
FO-40101	3	0	
FO-40420	3	0	
FO-30379	3	0	
FO-10908	3	0	
FO-10103	3	0	
FO-40256	3	0	
FO-40193	3	0	
FO-25577	3	0	
FO-40166	3	0	
FO-11266	3	0	
FO-10370	3	0	
FO-30553	3	0	
FO-40253	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40397	3	0	
FO-40704	3	0	
FO-40588	3	0	
FO-41027	3	0	
FO-25478	3	0	
FO-10138	3	0	
FO-30427	3	0	
FO-40364	3	0	
FO-40211	3	0	
FO-10629	3	0	
FO-20697	3	0	
FO-30488	3	0	
FO-10123	3	0	
FO-11747	3	0	
FO-41191	3	0	
FO-11033	3	0	
FO-10070	3	0	
FO-11459	3	0	
FO-10308	3	0	
FO-10132	3	0	
FO-20346	3	0	
FO-11799	3	0	
FO-11099	3	0	
FO-20737	3	0	
FO-20643	3	0	
FO-20484	3	0	
FO-40383	3	0	
FO-11646	3	0	
FO-40082	3	0	
FO-10128	3	0	
FO-40100	3	0	
FO-40322	3	0	
FO-41304	3	0	
FO-40150	3	0	
FO-10101	3	0	
FO-10067	3	0	
FO-30259	3	0	
FO-11733	3	0	
FO-10320	3	0	
FO-40793	3	0	
FO-20731	3	0	
FO-10288	3	0	
FO-40806	3	0	
FO-20392	3	0	
FO-10349	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40089	3	0	
FO-11380	3	0	
FO-40279	3	0	
FO-20321	3	0	
FO-11454	3	0	
FO-40317	3	0	
FO-11814	3	0	
FO-10781	3	0	
FO-20386	3	0	
FO-40175	3	0	
FO-10081	3	0	
FO-40199	3	0	
FO-41656	3	0	
FO-11543	3	0	
FO-10354	3	0	
FO-10096	3	0	
FO-11627	3	0	
FO-10415	3	0	
FO-10145	3	0	
FO-10236	3	0	
FO-10493	3	0	
FO-30512	3	0	
FO-10601	3	0	
FO-11413	3	0	
FO-41254	3	0	
FO-11572	3	0	
FO-10167	3	0	
FO-41142	3	0	
FO-40735	3	0	
FO-10211	3	0	
FO-41183	3	0	
FO-20674	3	0	
FO-40108	3	0	
FO-30301	3	0	
FO-40293	3	0	
FO-11558	3	0	
FO-11107	3	0	
FO-10956	3	0	
FO-41462	3	0	
FO-20787	3	0	
FO-36065	3	0	
FO-41665	3	0	
FO-40081	3	0	
FO-10858	3	0	
FO-11388	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10303	3	0	
FO-10387	3	0	
FO-10404	3	0	
FO-40801	3	0	
FO-20050	3	0	
FO-10314	3	0	
FO-11586	3	0	
FO-10791	3	0	
FO-41013	3	0	
FO-30250	3	0	
FO-40292	3	0	
FO-40475	3	0	
FO-20375	3	0	
FO-10926	3	0	
FO-11297	3	0	
FO-11291	3	0	
FO-11463	3	0	
FO-10782	3	0	
FO-10339	3	0	
FO-30554	3	0	
FO-40507	3	0	
FO-20758	3	0	
FO-40345	3	0	
FO-11309	3	0	
FO-40924	3	0	
FO-40390	3	0	
FO-10641	3	0	
FO-10785	3	0	
FO-20463	3	0	
FO-10794	3	0	
FO-11789	3	0	
FO-40359	3	0	
FO-11305	3	0	
FO-10642	3	0	
FO-10950	3	0	
FO-41630	3	0	
FO-40183	3	0	
FO-11129	3	0	
FO-40447	3	0	
FO-11818	3	0	
FO-11768	3	0	
FO-41691	3	0	
FO-40412	3	0	
FO-40276	3	0	
FO-40643	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20645	3	0	
FO-10648	3	0	
FO-10709	3	0	
FO-40997	3	0	
FO-40388	3	0	
FO-30408	3	0	
FO-40371	3	0	
FO-41566	3	0	
FO-10228	3	0	
FO-10633	3	0	
FO-40501	3	0	
FO-20728	3	0	
FO-41098	3	0	
FO-11496	3	0	
FO-10355	3	0	
FO-11741	3	0	
FO-10379	3	0	
FO-10360	3	0	
FO-40374	3	0	
FO-10494	3	0	
FO-41269	3	0	
FO-20451	3	0	
FO-10973	3	0	
FO-10532	3	0	
FO-10899	3	0	
FO-40358	3	0	
FO-10801	3	0	
FO-10312	3	0	
FO-40464	3	0	
FO-40281	3	0	
FO-30243	3	0	
FO-30433	3	0	
FO-11648	3	0	
FO-40846	3	0	
FO-40604	3	0	
FO-11654	3	0	
FO-40518	3	0	
FO-38177	3	0	
FO-10267	3	0	
FO-20634	3	0	
FO-10372	3	0	
FO-40572	3	0	
FO-20505	3	0	
FO-10803	3	0	
FO-41076	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40790	3	0	
FO-10792	3	0	
FO-11027	3	0	
FO-40476	3	0	
FO-11753	3	0	
FO-40510	3	0	
FO-10313	3	0	
FO-11144	3	0	
FO-11407	3	0	
FO-10413	3	0	
FO-10461	3	0	
FO-10945	3	0	
FO-10362	3	0	
FO-40670	3	0	
FO-11369	3	0	
FO-10296	3	0	
FO-41624	3	0	
FO-40734	3	0	
FO-41264	3	0	
FO-11170	3	0	
FO-10735	3	0	
FO-41106	3	0	
FO-40840	3	0	
FO-11066	3	0	
FO-10651	3	0	
FO-10536	3	0	
FO-11566	3	0	
FO-40783	3	0	
FO-11287	3	0	
FO-11719	3	0	
FO-40771	3	0	
FO-40685	3	0	
FO-11311	3	0	
FO-20678	3	0	
FO-10825	3	0	
FO-41518	3	0	
FO-11545	3	0	
FO-40614	3	0	
FO-11240	3	0	
FO-10990	3	0	
FO-41402	3	0	
FO-40263	3	0	
FO-40244	3	0	
FO-10844	3	0	
FO-40234	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10290	3	0	
FO-41369	3	0	
FO-11563	3	0	
FO-40948	3	0	
FO-40410	3	0	
FO-11260	3	0	
FO-10881	3	0	
FO-40566	3	0	
FO-10808	3	0	
FO-50124	3	0	
FO-10932	3	0	
FO-11709	3	0	
FO-10778	3	0	
FO-11705	3	0	
FO-40285	3	0	
FO-40853	3	0	
FO-40998	3	0	
FO-41324	3	0	
FO-10842	3	0	
FO-10988	3	0	
FO-10864	3	0	
FO-10535	3	0	
FO-10660	3	0	
FO-41601	3	0	
FO-41236	3	0	
FO-11616	3	0	
FO-10780	3	0	
FO-41015	3	0	
FO-41185	3	0	
FO-11589	3	0	
FO-40525	3	0	
FO-11409	3	0	
FO-11465	3	0	
FO-40635	3	0	
FO-10713	3	0	
FO-41698	3	0	
FO-10672	3	0	
FO-11455	3	0	
FO-40868	3	0	
FO-11208	3	0	
FO-40890	3	0	
FO-41398	3	0	
FO-11207	3	0	
FO-10275	3	0	
FO-41212	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40986	3	0	
FO-41364	3	0	
FO-11389	3	0	
FO-41138	3	0	
FO-41355	3	0	
FO-10806	3	0	
FO-11215	3	0	
FO-40992	3	0	
FO-30406	3	0	
FO-41088	3	0	
FO-41647	3	0	
FO-11224	3	0	
FO-10507	3	0	
FO-40597	3	0	
FO-11102	3	0	
FO-41168	3	0	
FO-40645	3	0	
FO-11664	3	0	
FO-11132	3	0	
FO-41243	3	0	
FO-10833	3	0	
FO-11489	3	0	
FO-40273	3	0	
FO-10574	3	0	
FO-41674	3	0	
FO-11183	3	0	
FO-11796	3	0	
FO-40910	3	0	
FO-41675	3	0	
FO-11071	3	0	
FO-11159	3	0	
FO-11555	3	0	
FO-11820	3	0	
FO-41072	3	0	
FO-11251	3	0	
FO-11416	3	0	
FO-40681	3	0	
FO-40443	3	0	
FO-11771	3	0	
FO-11451	3	0	
FO-11015	3	0	
FO-41043	3	0	
FO-11622	3	0	
FO-11590	3	0	
FO-11358	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40802	3	0	
FO-11173	3	0	
FO-41000	3	0	
FO-10819	3	0	
FO-11643	3	0	
FO-11184	3	0	
FO-11062	3	0	
FO-11779	3	0	
FO-11067	3	0	
FO-40742	3	0	
FO-41553	3	0	
FO-41473	3	0	
FO-11401	3	0	
FO-11438	3	0	
FO-30555	3	0	
FO-41403	3	0	
FO-11611	3	0	
FO-20418	3	0	
FO-41660	3	0	
FO-40987	3	0	
FO-41279	3	0	
FO-41033	3	0	
FO-41533	3	0	
FO-11847	3	0	
FO-11079	3	0	
FO-11378	3	0	
FO-11205	3	0	
FO-41315	3	0	
FO-41515	3	0	
FO-11485	3	0	
FO-11838	3	0	
FO-11707	3	0	

ESTCP Classification Demonstration Ranked Anomaly List

Site	FtOrd
Analyst	CB&I
Method	UXOLab
Dynamic Data	None
Cued Data	MetalMapper
Training Set	Custom
Stage	3
Version	1

Target ID:	Category: -1 = Training Set 0 = Can't Extract Reliable Parameters 1 = Likely TOI 2 = Can't Decide 3 = Likely Non-TOI	Dig Decision: 1 = Dig 0 = Don't Dig	TOI Size Band: (diameter in mm) 1 = diam < 50 mm 2 = 50 < diam < 100 3 = diam > 100 mm (Leave blank for Dig Decision = 0)
FO-50021	-1	1	3
FO-50072	-1	1	2
FO-25047	-1	1	2
FO-10183	-1	1	2
FO-10219	-1	1	1
FO-10114	-1	1	1
FO-10013	-1	1	1
FO-10139	-1	1	1
FO-20145	-1	1	3
FO-30347	-1	1	3
FO-20071	-1	1	2
FO-20018	-1	1	2
FO-25058	-1	1	2
FO-30094	-1	1	2
FO-10028	-1	1	1
FO-10051	-1	1	2
FO-50103	-1	1	3
FO-10023	-1	1	1
FO-50085	-1	1	2
FO-10292	-1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20010	-1	1	2
FO-30025	-1	1	2
FO-20001	-1	1	2
FO-30192	-1	1	2
FO-10280	-1	1	1
FO-30298	-1	1	3
FO-30515	-1	1	1
FO-35462	-1	1	1
FO-10387	-1	1	1
FO-10031	-1	1	2
FO-30010	-1	1	2
FO-35135	-1	1	2
FO-10055	-1	1	1
FO-50075	-1	1	2
FO-40513	-1	1	2
FO-30521	-1	1	1
FO-30050	-1	1	2
FO-35054	-1	1	2
FO-40058	-1	1	1
FO-10563	-1	1	1
FO-25098	-1	1	2
FO-11580	-1	1	1
FO-35056	-1	1	2
FO-40575	-1	1	2
FO-20672	-1	1	1
FO-10237	-1	1	1
FO-40264	-1	1	3
FO-35487	-1	1	1
FO-10003	-1	1	2
FO-30035	-1	1	3
FO-10149	-1	1	1
FO-35555	-1	1	1
FO-30289	-1	1	2
FO-10227	-1	1	2
FO-20229	-1	1	1
FO-40176	-1	1	1
FO-10240	-1	1	1
FO-20513	-1	1	1
FO-10142	-1	1	1
FO-10073	-1	1	1
FO-41108	-1	1	1
FO-10075	-1	1	1
FO-11312	-1	1	2
FO-40246	-1	1	1
FO-20129	-1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40191	-1	1	1
FO-11361	-1	1	1
FO-10284	-1	1	1
FO-10392	-1	1	1
FO-10905	-1	1	1
FO-11245	-1	1	1
FO-10892	-1	1	1
FO-20100	-1	1	2
FO-40225	-1	1	1
FO-11457	-1	1	1
FO-30121	-1	1	1
FO-30245	-1	1	1
FO-20370	-1	1	2
FO-10816	-1	1	1
FO-20401	-1	1	1
FO-20597	-1	1	1
FO-20500	-1	1	1
FO-25380	-1	1	1
FO-20261	-1	1	1
FO-36056	0	1	3
FO-40023	0	1	1
FO-10027	1	1	3
FO-10008	1	1	3
FO-10365	1	1	3
FO-20013	1	1	3
FO-50115	1	1	3
FO-41376	1	1	2
FO-20005	1	1	3
FO-10203	1	1	2
FO-50025	1	1	2
FO-50096	1	1	3
FO-35008	1	1	3
FO-50128	1	1	2
FO-20548	1	1	3
FO-35025	1	1	2
FO-11339	1	1	2
FO-25077	1	1	2
FO-50017	1	1	2
FO-50126	1	1	3
FO-50034	1	1	3
FO-40104	1	1	1
FO-10059	1	1	2
FO-40258	1	1	1
FO-30001	1	1	3
FO-25977	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25009	1	1	3
FO-50019	1	1	3
FO-10049	1	1	1
FO-50127	1	1	3
FO-35999	1	1	2
FO-11610	1	1	2
FO-50003	1	1	2
FO-20367	1	1	2
FO-30099	1	1	1
FO-10041	1	1	1
FO-35004	1	1	3
FO-50090	1	1	2
FO-11044	1	1	1
FO-35013	1	1	3
FO-30225	1	1	3
FO-10007	1	1	2
FO-50020	1	1	3
FO-35205	1	1	3
FO-20481	1	1	3
FO-10038	1	1	1
FO-30006	1	1	2
FO-30019	1	1	3
FO-50079	1	1	2
FO-20085	1	1	3
FO-25324	1	1	2
FO-50082	1	1	2
FO-50022	1	1	2
FO-50110	1	1	2
FO-35066	1	1	1
FO-35089	1	1	2
FO-50055	1	1	2
FO-25056	1	1	3
FO-25171	1	1	2
FO-10097	1	1	1
FO-25040	1	1	2
FO-35007	1	1	3
FO-50073	1	1	2
FO-20004	1	1	2
FO-20047	1	1	2
FO-50027	1	1	2
FO-10260	1	1	2
FO-40122	1	1	1
FO-40094	1	1	1
FO-25067	1	1	2
FO-20296	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25081	1	1	2
FO-20017	1	1	2
FO-40033	1	1	2
FO-25052	1	1	2
FO-50043	1	1	2
FO-41361	1	1	2
FO-35043	1	1	2
FO-25568	1	1	3
FO-30604	1	1	1
FO-25094	1	1	1
FO-50014	1	1	2
FO-40171	1	1	1
FO-50068	1	1	2
FO-10194	1	1	3
FO-50087	1	1	2
FO-50074	1	1	2
FO-30051	1	1	1
FO-27079	1	1	2
FO-20042	1	1	2
FO-20609	1	1	3
FO-35024	1	1	2
FO-40080	1	1	1
FO-35194	1	1	2
FO-20585	1	1	2
FO-10029	1	1	1
FO-26617	1	1	3
FO-10510	1	1	1
FO-10138	1	1	1
FO-25090	1	1	3
FO-50123	1	1	2
FO-50106	1	1	2
FO-40066	1	1	2
FO-30237	1	1	2
FO-50146	1	1	2
FO-40113	1	1	1
FO-10180	1	1	1
FO-25078	1	1	2
FO-25006	1	1	3
FO-20130	1	1	3
FO-20149	1	1	1
FO-35009	1	1	3
FO-25131	1	1	2
FO-40324	1	1	2
FO-25066	1	1	2
FO-25003	1	1	3

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10001	1	1	2
FO-35180	1	1	1
FO-20179	1	1	1
FO-10090	1	1	1
FO-25183	1	1	3
FO-25024	1	1	2
FO-20026	1	1	2
FO-50088	1	1	3
FO-50031	1	1	2
FO-25392	1	1	2
FO-25140	1	1	3
FO-36568	1	1	2
FO-25013	1	1	2
FO-35790	1	1	1
FO-20498	1	1	3
FO-30146	1	1	1
FO-40124	1	1	2
FO-50138	1	1	2
FO-40706	1	1	2
FO-20002	1	1	2
FO-50049	1	1	2
FO-50024	1	1	2
FO-40044	1	1	2
FO-30027	1	1	2
FO-25179	1	1	2
FO-50120	1	1	2
FO-40038	1	1	2
FO-25041	1	1	3
FO-40071	1	1	2
FO-25088	1	1	2
FO-50033	1	1	2
FO-25649	1	1	2
FO-35105	1	1	1
FO-20515	1	1	2
FO-50010	1	1	2
FO-35020	1	1	2
FO-25030	1	1	3
FO-30007	1	1	2
FO-50108	1	1	2
FO-40956	1	1	2
FO-40135	1	1	1
FO-40552	1	1	2
FO-10058	1	1	2
FO-10179	1	1	1
FO-10052	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-41326	1	1	1
FO-20202	1	1	1
FO-26284	1	1	2
FO-50036	1	1	2
FO-50005	1	1	2
FO-26490	1	1	2
FO-40012	1	1	2
FO-30277	1	1	3
FO-10024	1	1	1
FO-27149	1	1	2
FO-20106	1	1	1
FO-50026	1	1	1
FO-25268	1	1	3
FO-35012	1	1	2
FO-25109	1	1	2
FO-40013	1	1	2
FO-30004	1	1	2
FO-35522	1	1	2
FO-30014	1	1	2
FO-20016	1	1	2
FO-35242	1	1	1
FO-50013	1	1	2
FO-50132	1	1	2
FO-30011	1	1	1
FO-35129	1	1	2
FO-35029	1	1	2
FO-20012	1	1	2
FO-10130	1	1	1
FO-11203	1	1	2
FO-25414	1	1	1
FO-35039	1	1	2
FO-10126	1	1	1
FO-35038	1	1	2
FO-25089	1	1	2
FO-35018	1	1	2
FO-40207	1	1	2
FO-25128	1	1	2
FO-25073	1	1	2
FO-50150	1	1	3
FO-36009	1	1	3
FO-50083	1	1	2
FO-40032	1	1	2
FO-40115	1	1	1
FO-10211	1	1	1
FO-50069	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30068	1	1	1
FO-50097	1	1	2
FO-40454	1	1	2
FO-35028	1	1	3
FO-10089	1	1	3
FO-25487	1	1	2
FO-11213	1	1	2
FO-30267	1	1	1
FO-40018	1	1	2
FO-40325	1	1	2
FO-35002	1	1	3
FO-20480	1	1	1
FO-25022	1	1	2
FO-50080	1	1	2
FO-40377	1	1	1
FO-10201	1	1	2
FO-50077	1	1	2
FO-25118	1	1	2
FO-35155	1	1	1
FO-35072	1	1	1
FO-35218	1	1	1
FO-40017	1	1	2
FO-40367	1	1	1
FO-20305	1	1	2
FO-40014	1	1	2
FO-10054	1	1	1
FO-35019	1	1	3
FO-10167	1	1	1
FO-50061	1	1	2
FO-10424	1	1	1
FO-25123	1	1	2
FO-20524	1	1	1
FO-40015	1	1	2
FO-10238	1	1	1
FO-40008	1	1	3
FO-50149	1	1	2
FO-20193	1	1	2
FO-40037	1	1	2
FO-10012	1	1	2
FO-37157	1	1	2
FO-10062	1	1	1
FO-30372	1	1	2
FO-10002	1	1	3
FO-40239	1	1	1
FO-50086	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35042	1	1	2
FO-20214	1	1	2
FO-41164	1	1	2
FO-40077	1	1	1
FO-10124	1	1	1
FO-10006	1	1	2
FO-30018	1	1	1
FO-20224	1	1	2
FO-40133	1	1	2
FO-11726	1	1	2
FO-35453	1	1	1
FO-40810	1	1	2
FO-40029	1	1	2
FO-35436	1	1	1
FO-50118	1	1	2
FO-20141	1	1	2
FO-50007	1	1	2
FO-35117	1	1	1
FO-10263	1	1	1
FO-10231	1	1	1
FO-20589	1	1	1
FO-35104	1	1	1
FO-35620	1	1	1
FO-50111	1	1	2
FO-20222	1	1	1
FO-30061	1	1	1
FO-25189	1	1	2
FO-50084	1	1	2
FO-30346	1	1	1
FO-20154	1	1	2
FO-35055	1	1	3
FO-10010	1	1	3
FO-20158	1	1	2
FO-40001	1	1	2
FO-35298	1	1	1
FO-20014	1	1	3
FO-40226	1	1	1
FO-10316	1	1	1
FO-20043	1	1	1
FO-50032	1	1	2
FO-50139	1	1	2
FO-25037	1	1	2
FO-35037	1	1	3
FO-25168	1	1	2
FO-50051	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10019	1	1	2
FO-41166	1	1	2
FO-35197	1	1	1
FO-25026	1	1	2
FO-37195	1	1	2
FO-35156	1	1	1
FO-10014	1	1	2
FO-40021	1	1	2
FO-20162	1	1	3
FO-25025	1	1	3
FO-40031	1	1	2
FO-40019	1	1	2
FO-20118	1	1	2
FO-26370	1	1	3
FO-35048	1	1	2
FO-40101	1	1	1
FO-40025	1	1	2
FO-10181	1	1	1
FO-40985	1	1	2
FO-50105	1	1	2
FO-35098	1	1	1
FO-20008	1	1	2
FO-20124	1	1	1
FO-40034	1	1	2
FO-10088	1	1	1
FO-25046	1	1	2
FO-40254	1	1	1
FO-50148	1	1	2
FO-40006	1	1	2
FO-40106	1	1	2
FO-35016	1	1	2
FO-10766	1	1	1
FO-40028	1	1	2
FO-40016	1	1	2
FO-35337	1	1	1
FO-10821	1	1	1
FO-10116	1	1	1
FO-40011	1	1	2
FO-50011	1	1	2
FO-30147	1	1	1
FO-10074	1	1	2
FO-50143	1	1	2
FO-50144	1	1	2
FO-30115	1	1	1
FO-35083	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20172	1	1	1
FO-20133	1	1	1
FO-40009	1	1	2
FO-25295	1	1	2
FO-35023	1	1	2
FO-10056	1	1	1
FO-30020	1	1	1
FO-10476	1	1	1
FO-25178	1	1	2
FO-40091	1	1	1
FO-40129	1	1	1
FO-50081	1	1	2
FO-10018	1	1	1
FO-20003	1	1	3
FO-35034	1	1	2
FO-35045	1	1	2
FO-35933	1	1	3
FO-30039	1	1	1
FO-10174	1	1	1
FO-40041	1	1	2
FO-20021	1	1	2
FO-50042	1	1	2
FO-26862	1	1	1
FO-35158	1	1	1
FO-20595	1	1	1
FO-30057	1	1	1
FO-10034	1	1	1
FO-10085	1	1	1
FO-20378	1	1	2
FO-10091	1	1	1
FO-35731	1	1	2
FO-30422	1	1	2
FO-50008	1	1	2
FO-30612	1	1	2
FO-25142	1	1	2
FO-10123	1	1	1
FO-26162	1	1	1
FO-20466	1	1	1
FO-20104	1	1	2
FO-50107	1	1	2
FO-10389	1	1	1
FO-35099	1	1	1
FO-20091	1	1	2
FO-40005	1	1	2
FO-50002	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10064	1	1	1
FO-27231	1	1	2
FO-25138	1	1	2
FO-10083	1	1	1
FO-40168	1	1	1
FO-35217	1	1	2
FO-35356	1	1	1
FO-10025	1	1	1
FO-35003	1	1	2
FO-35365	1	1	1
FO-11495	1	1	1
FO-11388	1	1	1
FO-30075	1	1	2
FO-10016	1	1	1
FO-20072	1	1	1
FO-25224	1	1	2
FO-20057	1	1	3
FO-20512	1	1	2
FO-50012	1	1	2
FO-20180	1	1	2
FO-10112	1	1	1
FO-40027	1	1	2
FO-30009	1	1	1
FO-35446	1	1	2
FO-30344	1	1	2
FO-10067	1	1	1
FO-27932	1	1	1
FO-25069	1	1	2
FO-25064	1	1	2
FO-36013	1	1	2
FO-35431	1	1	3
FO-20773	1	1	1
FO-11863	1	1	1
FO-36372	1	1	3
FO-35345	1	1	1
FO-30557	1	1	2
FO-30144	1	1	1
FO-10214	1	1	1
FO-35114	1	1	1
FO-50028	1	1	2
FO-50100	1	1	1
FO-40107	1	1	1
FO-40082	1	1	1
FO-11776	1	1	2
FO-40114	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10145	1	1	1
FO-20137	1	1	2
FO-20059	1	1	2
FO-50098	1	1	2
FO-50140	1	1	2
FO-30077	1	1	1
FO-11282	1	1	1
FO-30145	1	1	2
FO-10132	1	1	1
FO-25036	1	1	2
FO-25211	1	1	1
FO-35601	1	1	1
FO-11702	1	1	1
FO-40227	1	1	1
FO-40253	1	1	1
FO-26707	1	1	2
FO-25203	1	1	2
FO-40190	1	1	1
FO-20157	1	1	2
FO-40007	1	1	2
FO-11608	1	1	2
FO-30185	1	1	1
FO-35088	1	1	2
FO-50063	1	1	2
FO-30429	1	1	2
FO-11646	1	1	1
FO-30286	1	1	2
FO-10061	1	1	1
FO-30302	1	1	1
FO-10164	1	1	1
FO-25416	1	1	1
FO-10053	1	1	1
FO-40022	1	1	2
FO-50009	1	1	2
FO-10157	1	1	1
FO-35060	1	1	2
FO-36199	1	1	3
FO-25020	1	1	2
FO-10212	1	1	1
FO-40242	1	1	1
FO-20064	1	1	1
FO-10271	1	1	1
FO-40873	1	1	1
FO-10117	1	1	1
FO-10634	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11638	1	1	1
FO-30447	1	1	2
FO-50093	1	1	2
FO-35059	1	1	2
FO-25062	1	1	2
FO-10081	1	1	1
FO-25484	1	1	1
FO-35741	1	1	1
FO-50065	1	1	2
FO-20032	1	1	2
FO-20404	1	1	2
FO-20238	1	1	3
FO-50001	1	1	2
FO-10098	1	1	1
FO-50030	1	1	2
FO-50062	1	1	2
FO-10009	1	1	2
FO-40806	1	1	1
FO-10279	1	1	1
FO-50089	1	1	1
FO-30163	1	1	2
FO-10239	1	1	1
FO-35334	1	1	1
FO-50045	1	1	2
FO-20009	1	1	3
FO-10030	1	1	1
FO-10327	1	1	2
FO-10103	1	1	1
FO-25222	1	1	2
FO-25776	1	1	2
FO-25801	1	1	1
FO-30043	1	1	1
FO-35566	1	1	2
FO-10128	1	1	1
FO-40146	1	1	1
FO-40322	1	1	1
FO-20729	1	1	1
FO-30249	1	1	2
FO-30345	1	1	1
FO-30526	1	1	1
FO-26368	1	1	2
FO-25373	1	1	1
FO-40083	1	1	1
FO-20406	1	1	2
FO-25384	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35212	1	1	1
FO-41468	1	1	1
FO-20328	1	1	1
FO-40243	1	1	1
FO-10077	1	1	1
FO-10434	1	1	1
FO-30086	1	1	1
FO-35319	1	1	1
FO-20152	1	1	1
FO-30103	1	1	1
FO-10110	1	1	1
FO-30287	1	1	2
FO-30265	1	1	2
FO-30064	1	1	2
FO-30367	1	1	1
FO-20030	1	1	2
FO-50122	1	1	2
FO-40035	1	1	2
FO-20022	1	1	1
FO-25476	1	1	1
FO-50038	1	1	2
FO-10163	1	1	1
FO-11121	1	1	1
FO-10063	1	1	1
FO-10022	1	1	2
FO-30002	1	1	2
FO-20121	1	1	1
FO-10314	1	1	1
FO-20485	1	1	1
FO-30315	1	1	1
FO-25053	1	1	2
FO-35604	1	1	2
FO-25145	1	1	1
FO-35143	1	1	1
FO-30626	1	1	2
FO-30168	1	1	2
FO-20142	1	1	2
FO-30314	1	1	2
FO-40070	1	1	1
FO-20113	1	1	1
FO-10255	1	1	1
FO-11799	1	1	1
FO-10700	1	1	2
FO-30602	1	1	2
FO-20243	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20011	1	1	3
FO-10141	1	1	1
FO-30074	1	1	1
FO-25103	1	1	2
FO-26682	1	1	2
FO-25230	1	1	2
FO-40117	1	1	1
FO-30113	1	1	1
FO-25085	1	1	2
FO-30246	1	1	2
FO-30170	1	1	2
FO-30443	1	1	1
FO-40157	1	1	1
FO-35021	1	1	2
FO-20270	1	1	2
FO-25076	1	1	2
FO-41598	1	1	2
FO-35195	1	1	1
FO-40812	1	1	2
FO-25970	1	1	2
FO-20037	1	1	2
FO-30202	1	1	2
FO-37515	1	1	1
FO-30235	1	1	2
FO-25061	1	1	2
FO-40210	1	1	1
FO-30533	1	1	2
FO-20169	1	1	2
FO-50131	1	1	3
FO-30154	1	1	1
FO-30356	1	1	1
FO-35309	1	1	1
FO-20217	1	1	2
FO-25042	1	1	2
FO-30368	1	1	2
FO-20257	1	1	2
FO-50125	1	1	2
FO-30332	1	1	2
FO-30083	1	1	1
FO-10066	1	1	1
FO-30032	1	1	2
FO-20112	1	1	2
FO-20735	1	1	1
FO-20055	1	1	2
FO-10521	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35612	1	1	2
FO-30616	1	1	2
FO-40228	1	1	1
FO-35367	1	1	1
FO-30172	1	1	3
FO-11063	1	1	1
FO-20383	1	1	1
FO-30495	1	1	3
FO-30038	1	1	1
FO-20163	1	1	2
FO-30611	1	1	2
FO-35288	1	1	2
FO-20467	1	1	2
FO-30352	1	1	2
FO-35053	1	1	2
FO-10959	1	1	1
FO-30089	1	1	1
FO-25038	1	1	2
FO-20049	1	1	1
FO-50121	1	1	2
FO-20443	1	1	1
FO-10288	1	1	1
FO-30436	1	1	2
FO-35967	1	1	1
FO-30176	1	1	2
FO-10144	1	1	1
FO-30117	1	1	1
FO-40390	1	1	1
FO-30060	1	1	1
FO-30101	1	1	2
FO-30446	1	1	1
FO-25612	1	1	1
FO-30119	1	1	2
FO-30238	1	1	1
FO-25533	1	1	2
FO-30362	1	1	1
FO-20373	1	1	1
FO-35094	1	1	1
FO-20119	1	1	2
FO-30571	1	1	1
FO-30646	1	1	2
FO-30437	1	1	2
FO-30630	1	1	1
FO-35035	1	1	2
FO-35041	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20077	1	1	1
FO-30122	1	1	2
FO-10150	1	1	1
FO-20098	1	1	1
FO-25068	1	1	2
FO-30104	1	1	1
FO-35244	1	1	1
FO-40131	1	1	2
FO-20722	1	1	1
FO-30373	1	1	2
FO-30363	1	1	2
FO-20385	1	1	1
FO-30055	1	1	2
FO-30072	1	1	1
FO-30182	1	1	1
FO-40002	1	1	3
FO-20377	1	1	1
FO-30532	1	1	1
FO-30627	1	1	2
FO-50006	1	1	2
FO-30195	1	1	2
FO-40073	1	1	2
FO-26779	1	1	1
FO-30551	1	1	2
FO-27151	1	1	1
FO-30252	1	1	2
FO-40333	1	1	2
FO-25202	1	1	2
FO-10198	1	1	1
FO-30357	1	1	3
FO-10072	1	1	1
FO-30067	1	1	1
FO-30142	1	1	2
FO-25074	1	1	2
FO-50112	1	1	2
FO-20303	1	1	1
FO-50053	1	1	2
FO-30134	1	1	2
FO-20219	1	1	1
FO-30441	1	1	2
FO-10564	1	1	1
FO-30063	1	1	1
FO-30636	1	1	3
FO-35608	1	1	1
FO-50054	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11168	1	1	2
FO-20287	1	1	1
FO-50064	1	1	2
FO-10040	1	1	1
FO-30276	1	1	2
FO-30141	1	1	1
FO-30137	1	1	1
FO-10407	1	1	1
FO-10048	1	1	1
FO-41387	1	1	1
FO-40213	1	1	2
FO-30644	1	1	1
FO-10286	1	1	1
FO-10570	1	1	1
FO-36640	1	1	1
FO-40089	1	1	1
FO-30293	1	1	2
FO-20025	1	1	2
FO-30070	1	1	1
FO-30650	1	1	3
FO-50113	1	1	1
FO-30558	1	1	1
FO-30164	1	1	1
FO-35824	1	1	2
FO-11037	1	1	1
FO-30234	1	1	2
FO-20330	1	1	1
FO-37916	1	1	2
FO-30263	1	1	1
FO-25323	1	1	1
FO-20489	1	1	2
FO-35388	1	1	1
FO-20604	1	1	1
FO-10099	1	1	1
FO-20053	1	1	2
FO-30036	1	1	2
FO-40150	1	1	1
FO-40248	1	1	1
FO-30118	1	1	2
FO-30503	1	1	2
FO-25577	1	1	1
FO-25002	1	1	3
FO-35519	1	1	2
FO-35757	1	1	2
FO-20060	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40166	1	1	1
FO-25306	1	1	2
FO-10818	1	1	1
FO-20550	1	1	3
FO-11541	1	1	2
FO-20405	1	1	1
FO-30264	1	1	2
FO-50041	1	1	2
FO-30513	1	1	2
FO-30514	1	1	2
FO-40151	1	1	2
FO-20272	1	1	2
FO-30426	1	1	2
FO-30012	1	1	2
FO-30069	1	1	1
FO-20248	1	1	2
FO-30642	1	1	2
FO-20318	1	1	1
FO-50039	1	1	1
FO-20048	1	1	1
FO-20181	1	1	2
FO-30081	1	1	2
FO-26827	1	1	2
FO-25225	1	1	2
FO-30400	1	1	2
FO-25105	1	1	2
FO-30291	1	1	1
FO-25112	1	1	1
FO-10060	1	1	1
FO-30205	1	1	1
FO-30324	1	1	1
FO-30365	1	1	2
FO-20007	1	1	2
FO-30476	1	1	1
FO-20110	1	1	1
FO-25459	1	1	1
FO-50135	1	1	2
FO-30567	1	1	1
FO-30191	1	1	1
FO-30008	1	1	1
FO-50095	1	1	1
FO-35261	1	1	2
FO-30381	1	1	2
FO-30049	1	1	1
FO-11119	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35137	1	1	2
FO-50070	1	1	2
FO-50119	1	1	2
FO-30003	1	1	2
FO-30219	1	1	3
FO-30279	1	1	2
FO-20024	1	1	1
FO-36188	1	1	2
FO-30613	1	1	2
FO-20165	1	1	2
FO-20309	1	1	2
FO-35273	1	1	1
FO-30383	1	1	2
FO-30178	1	1	1
FO-20277	1	1	1
FO-20006	1	1	2
FO-40046	1	1	1
FO-20271	1	1	1
FO-20281	1	1	2
FO-30290	1	1	1
FO-41103	1	1	2
FO-35384	1	1	2
FO-20691	1	1	1
FO-20291	1	1	1
FO-20743	1	1	1
FO-10079	1	1	1
FO-36442	1	1	2
FO-20501	1	1	2
FO-20101	1	1	1
FO-30497	1	1	2
FO-30620	1	1	2
FO-30564	1	1	2
FO-30527	1	1	2
FO-30015	1	1	2
FO-30065	1	1	1
FO-10218	1	1	2
FO-20080	1	1	1
FO-35359	1	1	2
FO-20384	1	1	1
FO-27899	1	1	1
FO-20492	1	1	1
FO-30107	1	1	1
FO-30166	1	1	2
FO-30261	1	1	1
FO-20760	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20369	1	1	1
FO-50015	1	1	2
FO-30572	1	1	1
FO-20421	1	1	1
FO-20028	1	1	1
FO-20093	1	1	2
FO-20412	1	1	1
FO-30181	1	1	1
FO-38465	1	1	2
FO-30431	1	1	2
FO-20206	1	1	2
FO-35285	1	1	1
FO-30123	1	1	2
FO-20399	1	1	1
FO-30054	1	1	1
FO-30087	1	1	2
FO-30469	1	1	1
FO-20087	1	1	1
FO-20103	1	1	2
FO-20134	1	1	1
FO-40673	1	1	1
FO-11743	1	1	1
FO-20019	1	1	2
FO-41038	1	1	2
FO-20065	1	1	1
FO-30418	1	1	1
FO-30414	1	1	2
FO-25206	1	1	3
FO-25340	1	1	3
FO-20441	1	1	1
FO-20739	1	1	2
FO-20046	1	1	2
FO-20712	1	1	2
FO-30475	1	1	2
FO-30333	1	1	1
FO-30097	1	1	2
FO-30179	1	1	1
FO-20591	1	1	2
FO-50057	1	1	1
FO-50004	1	1	2
FO-25045	1	1	2
FO-30473	1	1	2
FO-30175	1	1	2
FO-20612	1	1	2
FO-30605	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-50066	1	1	1
FO-20076	1	1	1
FO-20647	1	1	1
FO-30227	1	1	2
FO-25358	1	1	2
FO-30573	1	1	2
FO-20482	1	1	1
FO-30470	1	1	1
FO-41560	1	1	1
FO-30610	1	1	2
FO-20182	1	1	1
FO-30212	1	1	1
FO-27328	1	1	2
FO-37433	1	1	2
FO-30152	1	1	1
FO-30284	1	1	1
FO-20082	1	1	2
FO-30543	1	1	2
FO-30204	1	1	1
FO-30617	1	1	1
FO-10045	1	1	1
FO-30369	1	1	2
FO-20263	1	1	1
FO-25091	1	1	2
FO-30417	1	1	1
FO-30635	1	1	2
FO-20259	1	1	2
FO-20386	1	1	1
FO-30092	1	1	2
FO-30044	1	1	1
FO-30228	1	1	2
FO-20395	1	1	1
FO-20099	1	1	1
FO-20174	1	1	1
FO-30056	1	1	2
FO-35170	1	1	1
FO-50101	1	1	1
FO-30294	1	1	2
FO-50109	1	1	1
FO-50137	1	1	2
FO-30399	1	1	3
FO-30230	1	1	2
FO-30013	1	1	2
FO-50092	1	1	2
FO-30193	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30374	1	1	2
FO-30504	1	1	2
FO-20432	1	1	1
FO-30187	1	1	2
FO-30336	1	1	2
FO-30566	1	1	2
FO-10119	1	1	1
FO-20403	1	1	1
FO-20351	1	1	1
FO-11266	1	1	1
FO-20097	1	1	2
FO-20471	1	1	1
FO-30384	1	1	2
FO-20658	1	1	2
FO-20376	1	1	1
FO-30232	1	1	1
FO-30177	1	1	1
FO-30430	1	1	3
FO-20495	1	1	2
FO-30218	1	1	1
FO-37406	1	1	1
FO-20147	1	1	1
FO-30609	1	1	2
FO-10170	1	1	1
FO-30239	1	1	2
FO-30607	1	1	2
FO-25146	1	1	1
FO-20015	1	1	2
FO-11435	1	1	1
FO-30516	1	1	2
FO-30040	1	1	1
FO-30242	1	1	3
FO-10604	1	1	1
FO-20558	1	1	1
FO-20120	1	1	2
FO-30358	1	1	1
FO-25713	1	1	1
FO-20232	1	1	2
FO-20431	1	1	1
FO-30425	1	1	2
FO-30328	1	1	2
FO-20581	1	1	1
FO-30364	1	1	2
FO-30254	1	1	2
FO-50035	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30528	1	1	2
FO-20115	1	1	2
FO-40655	1	1	2
FO-30266	1	1	2
FO-20250	1	1	1
FO-20051	1	1	2
FO-30129	1	1	2
FO-25135	1	1	2
FO-50102	1	1	2
FO-20105	1	1	1
FO-30535	1	1	2
FO-40302	1	1	2
FO-20356	1	1	1
FO-30180	1	1	1
FO-30079	1	1	2
FO-40065	1	1	1
FO-30396	1	1	2
FO-40088	1	1	1
FO-20496	1	1	1
FO-41691	1	1	1
FO-40990	1	1	1
FO-20423	1	1	2
FO-30090	1	1	1
FO-20338	1	1	1
FO-10339	1	1	1
FO-30402	1	1	1
FO-30206	1	1	2
FO-30537	1	1	1
FO-20045	1	1	1
FO-30318	1	1	1
FO-30161	1	1	2
FO-11564	1	1	1
FO-30053	1	1	2
FO-30174	1	1	1
FO-30583	1	1	2
FO-30102	1	1	2
FO-20038	1	1	2
FO-30030	1	1	1
FO-20027	1	1	2
FO-30303	1	1	1
FO-30459	1	1	2
FO-20095	1	1	1
FO-20173	1	1	1
FO-20398	1	1	1
FO-30247	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30556	1	1	2
FO-20074	1	1	1
FO-20640	1	1	1
FO-30619	1	1	2
FO-30421	1	1	2
FO-35474	1	1	1
FO-50059	1	1	2
FO-30361	1	1	1
FO-30600	1	1	2
FO-30519	1	1	2
FO-30386	1	1	2
FO-20572	1	1	2
FO-50044	1	1	2
FO-30376	1	1	2
FO-30080	1	1	2
FO-40199	1	1	1
FO-30549	1	1	2
FO-10285	1	1	1
FO-30096	1	1	2
FO-40904	1	1	1
FO-30506	1	1	2
FO-20201	1	1	1
FO-20102	1	1	1
FO-30220	1	1	1
FO-20208	1	1	1
FO-30319	1	1	2
FO-30300	1	1	1
FO-20442	1	1	1
FO-30224	1	1	2
FO-20510	1	1	2
FO-30236	1	1	2
FO-11661	1	1	3
FO-30586	1	1	2
FO-20127	1	1	1
FO-50114	1	1	2
FO-20668	1	1	2
FO-20167	1	1	1
FO-30438	1	1	2
FO-11365	1	1	1
FO-30467	1	1	2
FO-30203	1	1	2
FO-40092	1	1	1
FO-10497	1	1	1
FO-10015	1	1	2
FO-30483	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-25403	1	1	1
FO-11673	1	1	2
FO-35109	1	1	2
FO-30133	1	1	2
FO-10069	1	1	1
FO-30420	1	1	2
FO-20759	1	1	2
FO-30398	1	1	2
FO-30639	1	1	2
FO-30471	1	1	2
FO-20308	1	1	1
FO-10070	1	1	1
FO-20322	1	1	1
FO-10577	1	1	1
FO-20694	1	1	1
FO-10232	1	1	2
FO-30378	1	1	2
FO-10442	1	1	1
FO-20108	1	1	2
FO-20517	1	1	2
FO-20153	1	1	2
FO-40040	1	1	1
FO-30591	1	1	2
FO-37820	1	1	2
FO-30574	1	1	3
FO-30330	1	1	2
FO-40208	1	1	2
FO-30273	1	1	2
FO-35161	1	1	1
FO-20107	1	1	1
FO-30608	1	1	3
FO-30534	1	1	1
FO-40100	1	1	1
FO-30052	1	1	1
FO-20336	1	1	2
FO-50076	1	1	1
FO-11303	1	1	1
FO-20254	1	1	1
FO-30640	1	1	2
FO-11755	1	1	1
FO-10101	1	1	1
FO-20476	1	1	1
FO-50130	1	1	2
FO-30355	1	1	2
FO-30138	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30529	1	1	2
FO-30112	1	1	2
FO-30501	1	1	2
FO-30409	1	1	2
FO-30162	1	1	1
FO-30100	1	1	2
FO-40710	1	1	2
FO-20075	1	1	1
FO-30108	1	1	1
FO-30648	1	1	2
FO-25478	1	1	1
FO-20703	1	1	1
FO-50067	1	1	2
FO-30522	1	1	2
FO-30337	1	1	2
FO-11539	1	1	2
FO-30628	1	1	2
FO-26456	1	1	2
FO-30223	1	1	2
FO-30622	1	1	2
FO-25427	1	1	1
FO-36118	1	1	2
FO-20783	1	1	1
FO-20316	1	1	2
FO-41105	1	1	2
FO-20392	1	1	1
FO-30597	1	1	3
FO-20444	1	1	1
FO-38312	1	1	2
FO-35417	1	1	1
FO-36150	1	1	1
FO-20684	1	1	2
FO-30297	1	1	2
FO-35614	1	1	2
FO-30211	1	1	3
FO-35565	1	1	1
FO-20215	1	1	1
FO-10382	1	1	1
FO-20680	1	1	2
FO-20478	1	1	1
FO-30257	1	1	1
FO-20218	1	1	2
FO-20689	1	1	1
FO-20509	1	1	1
FO-30326	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10076	1	1	1
FO-20350	1	1	2
FO-30169	1	1	1
FO-35150	1	1	1
FO-11374	1	1	2
FO-20593	1	1	1
FO-30034	1	1	1
FO-30215	1	1	2
FO-20769	1	1	1
FO-30546	1	1	3
FO-41396	1	1	2
FO-20033	1	1	2
FO-30281	1	1	2
FO-30151	1	1	2
FO-30377	1	1	1
FO-20307	1	1	1
FO-30312	1	1	1
FO-30198	1	1	3
FO-26675	1	1	1
FO-41191	1	1	1
FO-20685	1	1	1
FO-30550	1	1	2
FO-20371	1	1	2
FO-35910	1	1	2
FO-30391	1	1	1
FO-35280	1	1	2
FO-30320	1	1	3
FO-30548	1	1	1
FO-30479	1	1	1
FO-30167	1	1	2
FO-35260	1	1	2
FO-30487	1	1	2
FO-20178	1	1	1
FO-20360	1	1	1
FO-35014	1	1	2
FO-20354	1	1	1
FO-10738	1	1	1
FO-50133	1	1	2
FO-41252	1	1	2
FO-30629	1	1	2
FO-30569	1	1	2
FO-20155	1	1	1
FO-20079	1	1	2
FO-50050	1	1	2
FO-20160	1	1	1

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30449	1	1	2
FO-30058	1	1	1
FO-40148	1	1	1
FO-10753	1	1	2
FO-40648	1	1	1
FO-30022	1	1	2
FO-50078	1	1	2
FO-25132	1	1	2
FO-40049	1	1	1
FO-25086	1	1	2
FO-41498	1	1	1
FO-20252	1	1	1
FO-11460	1	1	1
FO-30116	1	1	1
FO-20125	1	1	1
FO-20139	1	1	2
FO-30580	1	1	1
FO-30334	1	1	2
FO-30098	1	1	1
FO-41269	1	1	1
FO-40546	1	1	1
FO-30031	1	1	2
FO-30288	1	1	1
FO-20570	1	1	1
FO-20054	1	1	1
FO-40020	1	1	2
FO-30433	1	1	1
FO-30046	1	1	1
FO-30120	1	1	2
FO-11728	1	1	1
FO-11419	1	1	1
FO-10629	1	1	1
FO-20236	1	1	1
FO-11144	1	1	1
FO-20562	1	1	2
FO-11742	1	1	1
FO-20301	1	1	1
FO-11703	1	1	1
FO-20177	1	1	1
FO-11380	1	1	1
FO-20627	1	1	2
FO-10320	1	1	1
FO-36065	1	1	2
FO-30427	1	1	1
FO-40521	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10792	1	1	1
FO-10415	1	1	1
FO-41586	1	1	1
FO-30442	1	1	2
FO-40141	1	1	1
FO-30322	1	1	2
FO-20090	1	1	1
FO-30221	1	1	2
FO-10249	1	1	1
FO-30592	1	1	2
FO-30048	1	1	1
FO-35465	1	1	2
FO-40276	1	1	1
FO-30190	1	1	1
FO-37409	1	1	2
FO-40796	1	1	1
FO-30127	1	1	2
FO-10484	1	1	1
FO-30405	1	1	2
FO-41276	1	1	1
FO-26014	1	1	1
FO-30598	1	1	2
FO-30105	1	1	1
FO-36515	1	1	1
FO-20029	1	1	1
FO-20457	1	1	1
FO-11065	1	1	2
FO-30394	1	1	2
FO-30184	1	1	3
FO-30304	1	1	2
FO-20233	1	1	1
FO-10362	1	1	1
FO-30410	1	1	3
FO-30494	1	1	2
FO-30614	1	1	2
FO-30579	1	1	1
FO-20258	1	1	1
FO-30109	1	1	2
FO-30268	1	1	1
FO-36022	1	1	2
FO-30652	1	1	2
FO-41555	1	1	1
FO-30341	1	1	2
FO-40312	1	1	2
FO-25213	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40317	1	1	1
FO-40200	1	1	1
FO-10532	1	1	1
FO-30037	1	1	1
FO-30401	1	1	2
FO-30510	1	1	2
FO-30393	1	1	2
FO-30140	1	1	2
FO-30517	1	1	2
FO-10436	1	1	1
FO-30385	1	1	2
FO-30366	1	1	2
FO-50048	1	1	3
FO-41384	1	1	1
FO-30440	1	1	2
FO-35558	1	1	2
FO-10803	1	1	1
FO-30153	1	1	2
FO-30271	1	1	2
FO-30325	1	1	2
FO-41123	1	1	2
FO-30651	1	1	2
FO-30375	1	1	2
FO-20411	1	1	1
FO-30160	1	1	1
FO-30156	1	1	1
FO-11471	1	1	3
FO-30275	1	1	2
FO-30540	1	1	2
FO-30128	1	1	2
FO-20088	1	1	2
FO-30165	1	1	2
FO-30260	1	1	1
FO-30482	1	1	2
FO-20362	1	1	1
FO-50142	1	1	2
FO-30331	1	1	2
FO-30486	1	1	2
FO-30387	1	1	2
FO-20023	1	1	2
FO-20067	1	1	1
FO-10781	1	1	1
FO-30477	1	1	2
FO-35960	1	1	1
FO-30042	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30329	1	1	2
FO-35357	1	1	2
FO-30624	1	1	2
FO-30183	1	1	2
FO-30259	1	1	1
FO-30563	1	1	2
FO-30240	1	1	2
FO-30594	1	1	2
FO-30584	1	1	2
FO-30544	1	1	2
FO-30415	1	1	2
FO-10355	1	1	1
FO-10345	1	1	1
FO-50094	1	1	2
FO-30618	1	1	2
FO-35908	1	1	2
FO-30350	1	1	2
FO-37517	1	1	2
FO-30216	1	1	1
FO-20608	1	1	1
FO-30095	1	1	2
FO-30508	1	1	1
FO-20284	1	1	2
FO-20020	1	1	2
FO-30582	1	1	2
FO-30150	1	1	1
FO-20686	1	1	2
FO-30419	1	1	3
FO-20230	1	1	1
FO-30213	1	1	1
FO-30045	1	1	2
FO-30547	1	1	1
FO-11033	1	1	1
FO-30596	1	1	2
FO-40311	1	1	1
FO-30621	1	1	2
FO-40329	1	1	3
FO-30452	1	1	2
FO-10924	1	1	1
FO-41462	1	1	1
FO-30155	1	1	2
FO-30631	1	1	1
FO-30173	1	1	1
FO-36563	1	1	1
FO-20522	1	1	2

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-50091	1	1	2
FO-25021	1	1	2
FO-30148	1	1	2
FO-30416	1	1	1
FO-20300	1	1	1
FO-30244	1	1	1
FO-40685	1	1	1
FO-35051	1	1	2
FO-20379	1	1	2
FO-30435	1	1	1
FO-30327	1	1	1
FO-30638	1	1	2
FO-20170	1	1	2
FO-30131	1	1	2
FO-30395	1	1	1
FO-30021	1	1	2
FO-30210	1	1	3
FO-40358	1	1	1
FO-20679	1	1	2
FO-30207	1	1	2
FO-20126	1	1	2
FO-30088	1	1	2
FO-30217	1	1	1
FO-30581	1	1	2
FO-20352	1	1	1
FO-30111	1	1	1
FO-30462	1	1	1
FO-30136	1	1	2
FO-30308	1	1	2
FO-40973	1	1	2
FO-10547	1	1	1
FO-30084	1	1	2
FO-30114	1	1	1
FO-30143	1	1	2
FO-20594	1	1	1
FO-30231	1	1	1
FO-41016	1	1	1
FO-30047	1	1	2
FO-10349	1	1	1
FO-30283	3	0	
FO-30518	3	0	
FO-30480	3	0	
FO-30158	3	0	
FO-30316	3	0	
FO-40436	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30201	3	0	
FO-30159	3	0	
FO-30428	3	0	
FO-30066	3	0	
FO-30017	3	0	
FO-30461	3	0	
FO-30078	3	0	
FO-41491	3	0	
FO-30496	3	0	
FO-30538	3	0	
FO-20285	3	0	
FO-40263	3	0	
FO-40572	3	0	
FO-30295	3	0	
FO-30633	3	0	
FO-40778	3	0	
FO-30530	3	0	
FO-10523	3	0	
FO-30595	3	0	
FO-30186	3	0	
FO-40102	3	0	
FO-30390	3	0	
FO-30285	3	0	
FO-20159	3	0	
FO-30016	3	0	
FO-30464	3	0	
FO-30296	3	0	
FO-30565	3	0	
FO-30258	3	0	
FO-25703	3	0	
FO-40977	3	0	
FO-40204	3	0	
FO-30468	3	0	
FO-41294	3	0	
FO-40285	3	0	
FO-20273	3	0	
FO-30460	3	0	
FO-20083	3	0	
FO-40392	3	0	
FO-35010	3	0	
FO-35317	3	0	
FO-40771	3	0	
FO-11681	3	0	
FO-30599	3	0	
FO-30498	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30255	3	0	
FO-11616	3	0	
FO-35296	3	0	
FO-20477	3	0	
FO-30349	3	0	
FO-36051	3	0	
FO-40281	3	0	
FO-30292	3	0	
FO-40588	3	0	
FO-37278	3	0	
FO-20240	3	0	
FO-30229	3	0	
FO-25362	3	0	
FO-10374	3	0	
FO-10416	3	0	
FO-40760	3	0	
FO-30463	3	0	
FO-30587	3	0	
FO-30272	3	0	
FO-30222	3	0	
FO-30589	3	0	
FO-10169	3	0	
FO-10309	3	0	
FO-20293	3	0	
FO-10785	3	0	
FO-30310	3	0	
FO-20706	3	0	
FO-30026	3	0	
FO-30511	3	0	
FO-30301	3	0	
FO-10233	3	0	
FO-30439	3	0	
FO-30309	3	0	
FO-20342	3	0	
FO-30413	3	0	
FO-50145	3	0	
FO-11544	3	0	
FO-30339	3	0	
FO-11092	3	0	
FO-30448	3	0	
FO-30653	3	0	
FO-11005	3	0	
FO-25561	3	0	
FO-30456	3	0	
FO-40504	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30082	3	0	
FO-30307	3	0	
FO-11877	3	0	
FO-10446	3	0	
FO-30226	3	0	
FO-20311	3	0	
FO-30351	3	0	
FO-20528	3	0	
FO-20716	3	0	
FO-10536	3	0	
FO-20479	3	0	
FO-11317	3	0	
FO-41137	3	0	
FO-20286	3	0	
FO-10087	3	0	
FO-20086	3	0	
FO-11753	3	0	
FO-40337	3	0	
FO-20634	3	0	
FO-30073	3	0	
FO-30311	3	0	
FO-20487	3	0	
FO-30348	3	0	
FO-30270	3	0	
FO-30139	3	0	
FO-10290	3	0	
FO-20407	3	0	
FO-30071	3	0	
FO-36241	3	0	
FO-25900	3	0	
FO-40279	3	0	
FO-40289	3	0	
FO-30209	3	0	
FO-20599	3	0	
FO-28076	3	0	
FO-20274	3	0	
FO-30560	3	0	
FO-40193	3	0	
FO-20468	3	0	
FO-20192	3	0	
FO-30243	3	0	
FO-30576	3	0	
FO-30354	3	0	
FO-20227	3	0	
FO-11291	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30023	3	0	
FO-20117	3	0	
FO-20751	3	0	
FO-10719	3	0	
FO-40606	3	0	
FO-20502	3	0	
FO-20439	3	0	
FO-35240	3	0	
FO-20070	3	0	
FO-30110	3	0	
FO-20195	3	0	
FO-41209	3	0	
FO-20140	3	0	
FO-20092	3	0	
FO-10844	3	0	
FO-20483	3	0	
FO-30278	3	0	
FO-35030	3	0	
FO-30481	3	0	
FO-20683	3	0	
FO-10312	3	0	
FO-10413	3	0	
FO-30489	3	0	
FO-30041	3	0	
FO-30434	3	0	
FO-20768	3	0	
FO-30125	3	0	
FO-11501	3	0	
FO-30404	3	0	
FO-20625	3	0	
FO-30403	3	0	
FO-41003	3	0	
FO-30505	3	0	
FO-50117	3	0	
FO-36471	3	0	
FO-30085	3	0	
FO-41254	3	0	
FO-20144	3	0	
FO-20675	3	0	
FO-20128	3	0	
FO-30392	3	0	
FO-20249	3	0	
FO-11719	3	0	
FO-10782	3	0	
FO-40475	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30559	3	0	
FO-20068	3	0	
FO-20136	3	0	
FO-35068	3	0	
FO-30478	3	0	
FO-20569	3	0	
FO-41264	3	0	
FO-20282	3	0	
FO-25485	3	0	
FO-10412	3	0	
FO-41223	3	0	
FO-30029	3	0	
FO-20164	3	0	
FO-20571	3	0	
FO-50071	3	0	
FO-20237	3	0	
FO-20553	3	0	
FO-10281	3	0	
FO-20484	3	0	
FO-20463	3	0	
FO-20393	3	0	
FO-20283	3	0	
FO-20063	3	0	
FO-10642	3	0	
FO-20503	3	0	
FO-40255	3	0	
FO-10997	3	0	
FO-40716	3	0	
FO-20151	3	0	
FO-11649	3	0	
FO-41643	3	0	
FO-20688	3	0	
FO-20630	3	0	
FO-11569	3	0	
FO-30335	3	0	
FO-30524	3	0	
FO-11747	3	0	
FO-30450	3	0	
FO-30196	3	0	
FO-30509	3	0	
FO-30343	3	0	
FO-30542	3	0	
FO-30637	3	0	
FO-20409	3	0	
FO-11369	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40359	3	0	
FO-20616	3	0	
FO-30407	3	0	
FO-10805	3	0	
FO-20425	3	0	
FO-10429	3	0	
FO-20288	3	0	
FO-30132	3	0	
FO-20397	3	0	
FO-20621	3	0	
FO-30601	3	0	
FO-20266	3	0	
FO-30028	3	0	
FO-20534	3	0	
FO-40762	3	0	
FO-20343	3	0	
FO-30423	3	0	
FO-10303	3	0	
FO-30124	3	0	
FO-11589	3	0	
FO-10133	3	0	
FO-36200	3	0	
FO-30388	3	0	
FO-40097	3	0	
FO-20774	3	0	
FO-20696	3	0	
FO-20340	3	0	
FO-41303	3	0	
FO-30262	3	0	
FO-30445	3	0	
FO-40793	3	0	
FO-10950	3	0	
FO-50116	3	0	
FO-20730	3	0	
FO-40501	3	0	
FO-41572	3	0	
FO-11496	3	0	
FO-25129	3	0	
FO-40690	3	0	
FO-20194	3	0	
FO-10277	3	0	
FO-30171	3	0	
FO-20532	3	0	
FO-11741	3	0	
FO-20255	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20588	3	0	
FO-30199	3	0	
FO-20260	3	0	
FO-30562	3	0	
FO-10425	3	0	
FO-20639	3	0	
FO-30194	3	0	
FO-40294	3	0	
FO-20424	3	0	
FO-20710	3	0	
FO-40397	3	0	
FO-30502	3	0	
FO-30641	3	0	
FO-30130	3	0	
FO-10175	3	0	
FO-20052	3	0	
FO-20788	3	0	
FO-20438	3	0	
FO-30253	3	0	
FO-40608	3	0	
FO-30520	3	0	
FO-30059	3	0	
FO-20531	3	0	
FO-20494	3	0	
FO-41229	3	0	
FO-10558	3	0	
FO-10791	3	0	
FO-10696	3	0	
FO-30317	3	0	
FO-40476	3	0	
FO-30615	3	0	
FO-20361	3	0	
FO-20190	3	0	
FO-20349	3	0	
FO-40482	3	0	
FO-20455	3	0	
FO-41051	3	0	
FO-10096	3	0	
FO-40183	3	0	
FO-11172	3	0	
FO-35543	3	0	
FO-10493	3	0	
FO-30585	3	0	
FO-11058	3	0	
FO-11087	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-40636	3	0	
FO-20459	3	0	
FO-11237	3	0	
FO-40334	3	0	
FO-40244	3	0	
FO-11246	3	0	
FO-10533	3	0	
FO-20448	3	0	
FO-20041	3	0	
FO-40364	3	0	
FO-40576	3	0	
FO-20454	3	0	
FO-30457	3	0	
FO-11243	3	0	
FO-20499	3	0	
FO-40293	3	0	
FO-11290	3	0	
FO-10153	3	0	
FO-30251	3	0	
FO-30248	3	0	
FO-40024	3	0	
FO-40388	3	0	
FO-30093	3	0	
FO-11096	3	0	
FO-35250	3	0	
FO-20226	3	0	
FO-20519	3	0	
FO-30382	3	0	
FO-30024	3	0	
FO-11287	3	0	
FO-30625	3	0	
FO-30005	3	0	
FO-30539	3	0	
FO-41392	3	0	
FO-30432	3	0	
FO-30411	3	0	
FO-11850	3	0	
FO-30353	3	0	
FO-10104	3	0	
FO-40486	3	0	
FO-20039	3	0	
FO-20563	3	0	
FO-25596	3	0	
FO-20251	3	0	
FO-20645	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-50129	3	0	
FO-20440	3	0	
FO-20598	3	0	
FO-11740	3	0	
FO-41013	3	0	
FO-20778	3	0	
FO-10032	3	0	
FO-30256	3	0	
FO-10370	3	0	
FO-11757	3	0	
FO-10793	3	0	
FO-20727	3	0	
FO-10531	3	0	
FO-40345	3	0	
FO-20772	3	0	
FO-30340	3	0	
FO-40119	3	0	
FO-35165	3	0	
FO-30444	3	0	
FO-50134	3	0	
FO-50124	3	0	
FO-30323	3	0	
FO-40346	3	0	
FO-40459	3	0	
FO-11463	3	0	
FO-30033	3	0	
FO-20465	3	0	
FO-30465	3	0	
FO-20624	3	0	
FO-10973	3	0	
FO-11311	3	0	
FO-20660	3	0	
FO-10958	3	0	
FO-30491	3	0	
FO-20667	3	0	
FO-40804	3	0	
FO-20321	3	0	
FO-10992	3	0	
FO-40062	3	0	
FO-20191	3	0	
FO-40297	3	0	
FO-20210	3	0	
FO-10388	3	0	
FO-30536	3	0	
FO-50058	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30545	3	0	
FO-40766	3	0	
FO-30561	3	0	
FO-30149	3	0	
FO-20603	3	0	
FO-30208	3	0	
FO-35535	3	0	
FO-11864	3	0	
FO-36690	3	0	
FO-20044	3	0	
FO-30606	3	0	
FO-20575	3	0	
FO-41626	3	0	
FO-30188	3	0	
FO-20269	3	0	
FO-10633	3	0	
FO-20207	3	0	
FO-11352	3	0	
FO-20299	3	0	
FO-30451	3	0	
FO-25385	3	0	
FO-11654	3	0	
FO-20748	3	0	
FO-40829	3	0	
FO-30577	3	0	
FO-41231	3	0	
FO-20185	3	0	
FO-20644	3	0	
FO-50046	3	0	
FO-11768	3	0	
FO-25607	3	0	
FO-30424	3	0	
FO-40645	3	0	
FO-40930	3	0	
FO-40579	3	0	
FO-20717	3	0	
FO-25530	3	0	
FO-40885	3	0	
FO-37080	3	0	
FO-20663	3	0	
FO-35451	3	0	
FO-20453	3	0	
FO-26094	3	0	
FO-40105	3	0	
FO-30472	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20786	3	0	
FO-11187	3	0	
FO-10236	3	0	
FO-40211	3	0	
FO-30338	3	0	
FO-10908	3	0	
FO-30590	3	0	
FO-30280	3	0	
FO-11241	3	0	
FO-11455	3	0	
FO-40412	3	0	
FO-11474	3	0	
FO-10283	3	0	
FO-50037	3	0	
FO-20265	3	0	
FO-40510	3	0	
FO-20253	3	0	
FO-41104	3	0	
FO-10120	3	0	
FO-20197	3	0	
FO-35725	3	0	
FO-20302	3	0	
FO-10020	3	0	
FO-20297	3	0	
FO-40408	3	0	
FO-20221	3	0	
FO-30412	3	0	
FO-20268	3	0	
FO-40081	3	0	
FO-20473	3	0	
FO-20738	3	0	
FO-10934	3	0	
FO-40069	3	0	
FO-30466	3	0	
FO-11725	3	0	
FO-11207	3	0	
FO-20436	3	0	
FO-40182	3	0	
FO-20298	3	0	
FO-40785	3	0	
FO-20720	3	0	
FO-30397	3	0	
FO-20669	3	0	
FO-30371	3	0	
FO-10360	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10641	3	0	
FO-10823	3	0	
FO-20574	3	0	
FO-40139	3	0	
FO-20779	3	0	
FO-40310	3	0	
FO-11627	3	0	
FO-20148	3	0	
FO-41630	3	0	
FO-11647	3	0	
FO-40761	3	0	
FO-20196	3	0	
FO-40507	3	0	
FO-20388	3	0	
FO-20559	3	0	
FO-20353	3	0	
FO-20324	3	0	
FO-50136	3	0	
FO-11814	3	0	
FO-40570	3	0	
FO-10396	3	0	
FO-20613	3	0	
FO-20631	3	0	
FO-20577	3	0	
FO-20629	3	0	
FO-40723	3	0	
FO-11170	3	0	
FO-41488	3	0	
FO-20516	3	0	
FO-20187	3	0	
FO-41665	3	0	
FO-30269	3	0	
FO-20056	3	0	
FO-10723	3	0	
FO-20546	3	0	
FO-10140	3	0	
FO-41601	3	0	
FO-30342	3	0	
FO-20724	3	0	
FO-20472	3	0	
FO-11129	3	0	
FO-10718	3	0	
FO-11459	3	0	
FO-20256	3	0	
FO-11546	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-35796	3	0	
FO-10648	3	0	
FO-25346	3	0	
FO-20292	3	0	
FO-40866	3	0	
FO-20176	3	0	
FO-10508	3	0	
FO-20732	3	0	
FO-36321	3	0	
FO-30189	3	0	
FO-20417	3	0	
FO-10842	3	0	
FO-20568	3	0	
FO-20600	3	0	
FO-10765	3	0	
FO-30531	3	0	
FO-20610	3	0	
FO-20434	3	0	
FO-11648	3	0	
FO-40447	3	0	
FO-20566	3	0	
FO-20204	3	0	
FO-40195	3	0	
FO-26026	3	0	
FO-30490	3	0	
FO-40175	3	0	
FO-20235	3	0	
FO-20315	3	0	
FO-20744	3	0	
FO-11409	3	0	
FO-20582	3	0	
FO-11116	3	0	
FO-20755	3	0	
FO-20066	3	0	
FO-40853	3	0	
FO-20034	3	0	
FO-11513	3	0	
FO-20050	3	0	
FO-20636	3	0	
FO-30453	3	0	
FO-41416	3	0	
FO-20035	3	0	
FO-20166	3	0	
FO-41260	3	0	
FO-10404	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30455	3	0	
FO-10354	3	0	
FO-20310	3	0	
FO-41369	3	0	
FO-10228	3	0	
FO-26349	3	0	
FO-20551	3	0	
FO-20728	3	0	
FO-20326	3	0	
FO-41364	3	0	
FO-10474	3	0	
FO-40992	3	0	
FO-20761	3	0	
FO-30649	3	0	
FO-20306	3	0	
FO-20089	3	0	
FO-40981	3	0	
FO-41117	3	0	
FO-40790	3	0	
FO-40099	3	0	
FO-30370	3	0	
FO-20313	3	0	
FO-20715	3	0	
FO-11027	3	0	
FO-30313	3	0	
FO-10308	3	0	
FO-30126	3	0	
FO-10193	3	0	
FO-40086	3	0	
FO-40704	3	0	
FO-20662	3	0	
FO-20358	3	0	
FO-20470	3	0	
FO-41318	3	0	
FO-20586	3	0	
FO-20319	3	0	
FO-11797	3	0	
FO-30623	3	0	
FO-10881	3	0	
FO-30568	3	0	
FO-20507	3	0	
FO-20587	3	0	
FO-40593	3	0	
FO-20462	3	0	
FO-30076	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20458	3	0	
FO-20430	3	0	
FO-40451	3	0	
FO-20081	3	0	
FO-11689	3	0	
FO-20449	3	0	
FO-11407	3	0	
FO-11487	3	0	
FO-30305	3	0	
FO-20745	3	0	
FO-50141	3	0	
FO-20754	3	0	
FO-20374	3	0	
FO-11558	3	0	
FO-11048	3	0	
FO-10601	3	0	
FO-41304	3	0	
FO-30200	3	0	
FO-20241	3	0	
FO-41617	3	0	
FO-40965	3	0	
FO-10801	3	0	
FO-41261	3	0	
FO-20518	3	0	
FO-10549	3	0	
FO-40734	3	0	
FO-40643	3	0	
FO-10809	3	0	
FO-30306	3	0	
FO-20530	3	0	
FO-10899	3	0	
FO-10956	3	0	
FO-20529	3	0	
FO-10516	3	0	
FO-20584	3	0	
FO-10437	3	0	
FO-20348	3	0	
FO-20295	3	0	
FO-40153	3	0	
FO-40075	3	0	
FO-20657	3	0	
FO-40801	3	0	
FO-20220	3	0	
FO-30380	3	0	
FO-20673	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11410	3	0	
FO-11279	3	0	
FO-41076	3	0	
FO-20726	3	0	
FO-11215	3	0	
FO-11162	3	0	
FO-10267	3	0	
FO-11851	3	0	
FO-20325	3	0	
FO-20211	3	0	
FO-36198	3	0	
FO-20547	3	0	
FO-30485	3	0	
FO-20592	3	0	
FO-20116	3	0	
FO-40410	3	0	
FO-20239	3	0	
FO-20775	3	0	
FO-10275	3	0	
FO-20312	3	0	
FO-20766	3	0	
FO-30484	3	0	
FO-40597	3	0	
FO-30197	3	0	
FO-20390	3	0	
FO-20389	3	0	
FO-41640	3	0	
FO-20061	3	0	
FO-40670	3	0	
FO-41142	3	0	
FO-40581	3	0	
FO-10709	3	0	
FO-20511	3	0	
FO-25343	3	0	
FO-10461	3	0	
FO-11789	3	0	
FO-20646	3	0	
FO-20780	3	0	
FO-41281	3	0	
FO-10768	3	0	
FO-30135	3	0	
FO-10825	3	0	
FO-41622	3	0	
FO-20486	3	0	
FO-20408	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-10499	3	0	
FO-20784	3	0	
FO-20419	3	0	
FO-10990	3	0	
FO-10735	3	0	
FO-11796	3	0	
FO-20637	3	0	
FO-20692	3	0	
FO-20276	3	0	
FO-10443	3	0	
FO-10660	3	0	
FO-20375	3	0	
FO-41336	3	0	
FO-20200	3	0	
FO-40108	3	0	
FO-20596	3	0	
FO-41253	3	0	
FO-20514	3	0	
FO-20708	3	0	
FO-20304	3	0	
FO-30379	3	0	
FO-20447	3	0	
FO-41138	3	0	
FO-20161	3	0	
FO-20556	3	0	
FO-20123	3	0	
FO-41441	3	0	
FO-20527	3	0	
FO-10494	3	0	
FO-11066	3	0	
FO-11465	3	0	
FO-30507	3	0	
FO-20539	3	0	
FO-20746	3	0	
FO-20560	3	0	
FO-41612	3	0	
FO-11578	3	0	
FO-20228	3	0	
FO-20561	3	0	
FO-30578	3	0	
FO-41698	3	0	
FO-20382	3	0	
FO-20381	3	0	
FO-20488	3	0	
FO-40712	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20231	3	0	
FO-40735	3	0	
FO-40846	3	0	
FO-20345	3	0	
FO-20664	3	0	
FO-20533	3	0	
FO-11831	3	0	
FO-20433	3	0	
FO-11566	3	0	
FO-40566	3	0	
FO-30214	3	0	
FO-20535	3	0	
FO-40998	3	0	
FO-20565	3	0	
FO-20355	3	0	
FO-10778	3	0	
FO-10926	3	0	
FO-20203	3	0	
FO-10379	3	0	
FO-41218	3	0	
FO-30359	3	0	
FO-20536	3	0	
FO-20084	3	0	
FO-20314	3	0	
FO-11733	3	0	
FO-41672	3	0	
FO-25683	3	0	
FO-41212	3	0	
FO-41399	3	0	
FO-20460	3	0	
FO-50040	3	0	
FO-20337	3	0	
FO-20656	3	0	
FO-40877	3	0	
FO-20601	3	0	
FO-30321	3	0	
FO-41232	3	0	
FO-40948	3	0	
FO-20135	3	0	
FO-20670	3	0	
FO-40924	3	0	
FO-40928	3	0	
FO-20525	3	0	
FO-50023	3	0	
FO-30299	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11229	3	0	
FO-11545	3	0	
FO-20545	3	0	
FO-30389	3	0	
FO-20733	3	0	
FO-20661	3	0	
FO-20666	3	0	
FO-20290	3	0	
FO-20078	3	0	
FO-30643	3	0	
FO-20223	3	0	
FO-20464	3	0	
FO-20212	3	0	
FO-11632	3	0	
FO-11586	3	0	
FO-11456	3	0	
FO-20267	3	0	
FO-20400	3	0	
FO-20490	3	0	
FO-40464	3	0	
FO-41321	3	0	
FO-11232	3	0	
FO-30474	3	0	
FO-10988	3	0	
FO-30241	3	0	
FO-20543	3	0	
FO-10372	3	0	
FO-20781	3	0	
FO-20036	3	0	
FO-10833	3	0	
FO-40474	3	0	
FO-50018	3	0	
FO-50147	3	0	
FO-20246	3	0	
FO-30588	3	0	
FO-20671	3	0	
FO-50029	3	0	
FO-20186	3	0	
FO-10798	3	0	
FO-10296	3	0	
FO-20742	3	0	
FO-20327	3	0	
FO-10780	3	0	
FO-10858	3	0	
FO-20199	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-30062	3	0	
FO-10890	3	0	
FO-50052	3	0	
FO-20552	3	0	
FO-20062	3	0	
FO-10787	3	0	
FO-10864	3	0	
FO-11389	3	0	
FO-11662	3	0	
FO-30454	3	0	
FO-20146	3	0	
FO-20776	3	0	
FO-30408	3	0	
FO-20150	3	0	
FO-10806	3	0	
FO-20542	3	0	
FO-11208	3	0	
FO-10916	3	0	
FO-41243	3	0	
FO-40972	3	0	
FO-30645	3	0	
FO-30274	3	0	
FO-20414	3	0	
FO-20372	3	0	
FO-50060	3	0	
FO-20094	3	0	
FO-20541	3	0	
FO-20450	3	0	
FO-20323	3	0	
FO-41624	3	0	
FO-20429	3	0	
FO-20410	3	0	
FO-20420	3	0	
FO-50099	3	0	
FO-20497	3	0	
FO-41360	3	0	
FO-11413	3	0	
FO-30603	3	0	
FO-20242	3	0	
FO-40783	3	0	
FO-20456	3	0	
FO-20521	3	0	
FO-20620	3	0	
FO-10835	3	0	
FO-40132	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20674	3	0	
FO-40907	3	0	
FO-30091	3	0	
FO-30647	3	0	
FO-20523	3	0	
FO-20699	3	0	
FO-30157	3	0	
FO-20682	3	0	
FO-10932	3	0	
FO-40371	3	0	
FO-20365	3	0	
FO-40890	3	0	
FO-11107	3	0	
FO-40659	3	0	
FO-41566	3	0	
FO-41355	3	0	
FO-20653	3	0	
FO-20213	3	0	
FO-20705	3	0	
FO-10535	3	0	
FO-11004	3	0	
FO-20317	3	0	
FO-20493	3	0	
FO-10672	3	0	
FO-11309	3	0	
FO-20659	3	0	
FO-30593	3	0	
FO-30500	3	0	
FO-40536	3	0	
FO-20346	3	0	
FO-20607	3	0	
FO-20702	3	0	
FO-20247	3	0	
FO-20654	3	0	
FO-20731	3	0	
FO-20469	3	0	
FO-20723	3	0	
FO-20278	3	0	
FO-20359	3	0	
FO-40374	3	0	
FO-38177	3	0	
FO-40809	3	0	
FO-20415	3	0	
FO-50016	3	0	
FO-20787	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20437	3	0	
FO-30541	3	0	
FO-20446	3	0	
FO-20040	3	0	
FO-41221	3	0	
FO-11042	3	0	
FO-40970	3	0	
FO-50056	3	0	
FO-40868	3	0	
FO-20294	3	0	
FO-30523	3	0	
FO-40185	3	0	
FO-20416	3	0	
FO-11454	3	0	
FO-41529	3	0	
FO-40256	3	0	
FO-10794	3	0	
FO-30233	3	0	
FO-20143	3	0	
FO-41106	3	0	
FO-10703	3	0	
FO-20387	3	0	
FO-20331	3	0	
FO-11183	3	0	
FO-20069	3	0	
FO-11705	3	0	
FO-41183	3	0	
FO-20198	3	0	
FO-30499	3	0	
FO-11572	3	0	
FO-20555	3	0	
FO-20782	3	0	
FO-20537	3	0	
FO-20188	3	0	
FO-20741	3	0	
FO-20540	3	0	
FO-41028	3	0	
FO-20341	3	0	
FO-20344	3	0	
FO-20649	3	0	
FO-40953	3	0	
FO-20234	3	0	
FO-40635	3	0	
FO-41168	3	0	
FO-40420	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20332	3	0	
FO-20651	3	0	
FO-41088	3	0	
FO-30106	3	0	
FO-20366	3	0	
FO-41635	3	0	
FO-20506	3	0	
FO-20111	3	0	
FO-10093	3	0	
FO-30360	3	0	
FO-10847	3	0	
FO-20557	3	0	
FO-11240	3	0	
FO-41324	3	0	
FO-20707	3	0	
FO-20580	3	0	
FO-40945	3	0	
FO-20648	3	0	
FO-41330	3	0	
FO-20714	3	0	
FO-11669	3	0	
FO-20617	3	0	
FO-30525	3	0	
FO-20225	3	0	
FO-20752	3	0	
FO-40840	3	0	
FO-11543	3	0	
FO-20725	3	0	
FO-41185	3	0	
FO-20665	3	0	
FO-20189	3	0	
FO-41388	3	0	
FO-20721	3	0	
FO-30250	3	0	
FO-41027	3	0	
FO-20709	3	0	
FO-20132	3	0	
FO-20701	3	0	
FO-30554	3	0	
FO-40799	3	0	
FO-41457	3	0	
FO-20122	3	0	
FO-40614	3	0	
FO-11357	3	0	
FO-20171	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20736	3	0	
FO-11132	3	0	
FO-20474	3	0	
FO-20109	3	0	
FO-20763	3	0	
FO-11449	3	0	
FO-41002	3	0	
FO-11349	3	0	
FO-20184	3	0	
FO-20280	3	0	
FO-20790	3	0	
FO-20756	3	0	
FO-11664	3	0	
FO-11820	3	0	
FO-20628	3	0	
FO-30512	3	0	
FO-20767	3	0	
FO-20216	3	0	
FO-10754	3	0	
FO-41069	3	0	
FO-20175	3	0	
FO-20711	3	0	
FO-40903	3	0	
FO-20333	3	0	
FO-20753	3	0	
FO-20320	3	0	
FO-11489	3	0	
FO-40273	3	0	
FO-10481	3	0	
FO-50104	3	0	
FO-41674	3	0	
FO-10758	3	0	
FO-11159	3	0	
FO-20031	3	0	
FO-20363	3	0	
FO-41098	3	0	
FO-20677	3	0	
FO-20549	3	0	
FO-41402	3	0	
FO-20058	3	0	
FO-20623	3	0	
FO-41236	3	0	
FO-10507	3	0	
FO-11771	3	0	
FO-11555	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20520	3	0	
FO-20544	3	0	
FO-11138	3	0	
FO-20504	3	0	
FO-10313	3	0	
FO-20335	3	0	
FO-11164	3	0	
FO-20329	3	0	
FO-20622	3	0	
FO-20380	3	0	
FO-20764	3	0	
FO-41043	3	0	
FO-11332	3	0	
FO-20156	3	0	
FO-11102	3	0	
FO-40443	3	0	
FO-50047	3	0	
FO-40910	3	0	
FO-20655	3	0	
FO-11611	3	0	
FO-20526	3	0	
FO-20615	3	0	
FO-20611	3	0	
FO-41072	3	0	
FO-20777	3	0	
FO-20491	3	0	
FO-40604	3	0	
FO-20475	3	0	
FO-11657	3	0	
FO-20168	3	0	
FO-20687	3	0	
FO-41647	3	0	
FO-41398	3	0	
FO-20339	3	0	
FO-20635	3	0	
FO-40681	3	0	
FO-10945	3	0	
FO-11358	3	0	
FO-20614	3	0	
FO-40052	3	0	
FO-20578	3	0	
FO-20771	3	0	
FO-20576	3	0	
FO-20579	3	0	
FO-20693	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11071	3	0	
FO-11563	3	0	
FO-20695	3	0	
FO-11697	3	0	
FO-20364	3	0	
FO-20445	3	0	
FO-41215	3	0	
FO-41669	3	0	
FO-20244	3	0	
FO-11825	3	0	
FO-20413	3	0	
FO-20264	3	0	
FO-20650	3	0	
FO-20131	3	0	
FO-11251	3	0	
FO-20652	3	0	
FO-30553	3	0	
FO-30282	3	0	
FO-20618	3	0	
FO-40665	3	0	
FO-20245	3	0	
FO-20740	3	0	
FO-20698	3	0	
FO-20394	3	0	
FO-41656	3	0	
FO-20713	3	0	
FO-10574	3	0	
FO-10820	3	0	
FO-11709	3	0	
FO-41675	3	0	
FO-20606	3	0	
FO-20567	3	0	
FO-20757	3	0	
FO-40234	3	0	
FO-20538	3	0	
FO-11699	3	0	
FO-20758	3	0	
FO-11294	3	0	
FO-41682	3	0	
FO-20391	3	0	
FO-10713	3	0	
FO-20762	3	0	
FO-11224	3	0	
FO-40376	3	0	
FO-20426	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20396	3	0	
FO-20642	3	0	
FO-11015	3	0	
FO-20402	3	0	
FO-20564	3	0	
FO-20505	3	0	
FO-20096	3	0	
FO-20681	3	0	
FO-20641	3	0	
FO-40518	3	0	
FO-11818	3	0	
FO-10808	3	0	
FO-20676	3	0	
FO-20770	3	0	
FO-20690	3	0	
FO-11260	3	0	
FO-11416	3	0	
FO-40997	3	0	
FO-40811	3	0	
FO-20749	3	0	
FO-11451	3	0	
FO-41312	3	0	
FO-20427	3	0	
FO-20590	3	0	
FO-20138	3	0	
FO-20632	3	0	
FO-20209	3	0	
FO-20633	3	0	
FO-20643	3	0	
FO-20275	3	0	
FO-20451	3	0	
FO-20428	3	0	
FO-41000	3	0	
FO-20789	3	0	
FO-20700	3	0	
FO-20205	3	0	
FO-20114	3	0	
FO-11723	3	0	
FO-11297	3	0	
FO-20279	3	0	
FO-30406	3	0	
FO-20347	3	0	
FO-20697	3	0	
FO-20289	3	0	
FO-10651	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-20619	3	0	
FO-20765	3	0	
FO-30458	3	0	
FO-20718	3	0	
FO-20626	3	0	
FO-20678	3	0	
FO-10819	3	0	
FO-20461	3	0	
FO-20368	3	0	
FO-11590	3	0	
FO-40857	3	0	
FO-11184	3	0	
FO-41685	3	0	
FO-20737	3	0	
FO-40292	3	0	
FO-20573	3	0	
FO-20747	3	0	
FO-41518	3	0	
FO-11305	3	0	
FO-30632	3	0	
FO-20183	3	0	
FO-20554	3	0	
FO-40802	3	0	
FO-30488	3	0	
FO-20262	3	0	
FO-11099	3	0	
FO-20508	3	0	
FO-11344	3	0	
FO-30555	3	0	
FO-20638	3	0	
FO-41553	3	0	
FO-11622	3	0	
FO-20583	3	0	
FO-20357	3	0	
FO-20334	3	0	
FO-20602	3	0	
FO-41473	3	0	
FO-41015	3	0	
FO-11062	3	0	
FO-20435	3	0	
FO-40742	3	0	
FO-20750	3	0	
FO-30570	3	0	
FO-40987	3	0	
FO-30552	3	0	

Target ID:	Category:	Dig Decision:	TOI Size Band:
FO-11643	3	0	
FO-20452	3	0	
FO-11067	3	0	
FO-30634	3	0	
FO-20704	3	0	
FO-30492	3	0	
FO-30575	3	0	
FO-30493	3	0	
FO-10527	3	0	
FO-20719	3	0	
FO-20418	3	0	
FO-20605	3	0	
FO-40525	3	0	
FO-41033	3	0	
FO-41533	3	0	
FO-41660	3	0	
FO-20422	3	0	
FO-40986	3	0	
FO-20073	3	0	
FO-11707	3	0	
FO-11438	3	0	
FO-41403	3	0	
FO-40383	3	0	
FO-11173	3	0	
FO-11847	3	0	
FO-11079	3	0	
FO-41279	3	0	
FO-20734	3	0	
FO-11265	3	0	
FO-11401	3	0	
FO-11378	3	0	
FO-11779	3	0	
FO-11485	3	0	
FO-41515	3	0	
FO-20785	3	0	
FO-11205	3	0	
FO-41315	3	0	
FO-11838	3	0	

APPENDIX E TOI - PREDICTED VS. ACTUAL

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
1	FO-50021	-1	1	3	59	609654.98	4051005.33	155mm TP	0.18	609655.03	4051005.28	40	Projectile, 155mm, shrapnel, MK 1	34	TOI1	19.1	6.6
90	FO-20013	1	1	3	30	609824.35	4051039.74	105 Projo	0.07	609824.22	4051039.75	25	Seeded Item	31	TOI1	5.1	12.9
91	FO-50115	1	1	3	41	609788.19	4051124.50	155mm TP	0.24	609788.01	4051124.52	35	Projectile, 155mm, shrapnel, MK 1	34	TOI1	6.4	18.5
93	FO-20005	1	1	3	29	609827.12	4051025.78	Lg ISO TP	0.11	609827.19	4051025.77	30	Seeded Item (SAME AS 20051)	30	TOI1	0.9	7.0
96	FO-50096	1	1	3	49	609754.54	4051310.42	155mm TP	0.11	609754.43	4051310.24	34	Projectile, 155mm, shrapnel, MK 1	34	TOI1	14.8	20.8
97	FO-35008	1	1	3	44	609601.52	4051178.20	Lg ISO TP	0.16	609601.52	4051178.20	40	Seeded Item	30	TOI1	3.6	0.4
104	FO-50126	1	1	3	43	609801.79	4051241.67	155mm TP	0.14	609801.75	4051241.53	37	Projectile, 155mm, shrapnel, MK 1	34	TOI1	6.1	13.9
105	FO-50034	1	1	3	44	609678.46	4051277.11	155mm TP	0.14	609678.43	4051277.24	38	Projectile, 155mm, shrapnel, MK 1	34	TOI1	5.9	13.5
109	FO-30001	1	1	3	52	609661.65	4051198.73	155mm TP	0.14	609661.60	4051198.75	43	Projectile, 155mm, shrapnel, MK 1	34	TOI1	9.3	5.2
111	FO-25009	1	1	3	35	609785.51	4051023.18	155mm TP	0.27	609785.55	4051023.14	26	Projectile, 155mm, shrapnel, MK 1	34	TOI1	8.8	4.8
114	FO-50127	1	1	3	55	609802.68	4051249.58	155mm TP	0.14	609802.55	4051249.64	44	Projectile, 155mm, shrapnel, MK 1	34	TOI1	11.5	14.4
124	FO-35013	1	1	3	55	609620.67	4051224.44	Lg ISO TP	0.22	609620.70	4051224.41	45	Seeded Item	30	TOI1	9.6	4.8
127	FO-50020	1	1	3	48	609643.79	4051098.39	155mm TP	0.19	609643.60	4051098.33	45	Projectile, 155mm, shrapnel, MK 1	34	TOI1	3.2	19.4
142	FO-25056	1	1	3	50	609796.53	4051081.48	155mm TP	0.25	609796.41	4051081.61	48	Projectile, 155mm, shrapnel, MK 1	34	TOI1	2.3	17.7
146	FO-35007	1	1	3	54	609650.62	4051189.08	155mm TP	0.19	609650.62	4051189.08	50	Projectile, 155mm, shrapnel, MK 1	34	TOI1	4.2	0.3
163	FO-25568	1	1	3	59	609812.32	4051074.08	155mm TP	0.19	609812.41	4051074.04	58	Projectile, 155mm, shrapnel, MK 1	34	TOI1	0.9	9.0
169	FO-10194	1	1	3	60	608635.31	4051091.85	155mm TP	0.27	608635.31	4051091.85	50	Seeded Item (SAME AS 10002. SAME AS 10089)	64	TOI1	10.4	0.3
181	FO-26617	1	1	3	48	609810.97	4051082.27	Lg ISO 75cm	0.38	609810.96	4051082.27	38	Seeded Item (SAME AS 25140)	31	TOI1	9.8	1.4
184	FO-25090	1	1	3	48	609811.55	4051046.10	155mm TP	0.20	609811.58	4051046.21	25	Projectile, 155mm, shrapnel, MK 1	35	TOI1	23.1	11.1
193	FO-25006	1	1	3	32	609827.52	4051080.82	155mm TP	0.24	609827.39	4051080.82	42	Projectile, 155mm, shrapnel, MK 1	34	TOI1	9.6	13.2
196	FO-35009	1	1	3	42	609620.95	4051211.80	105 Projo	0.28	609620.97	4051211.79	42	Seeded Item	30	TOI1	0.2	1.5
211	FO-25140	1	1	3	47	609810.96	4051082.26	Lg ISO TP	0.25	609810.98	4051082.26	38	Seeded Item (SAME AS 26617)	31	TOI1	8.9	2.0
215	FO-20498	1	1	3	53	609842.13	4051045.94	155mm TP	0.26	609842.06	4051046.12	50	Projectile, 155mm, shrapnel, MK 1 (SAME AS 20009-5)	37	TOI1	2.6	19.0
228	FO-25041	1	1	3	37	609837.18	4051081.27	155mm TP	0.23	609837.15	4051081.16	40	Projectile, 155mm, shrapnel, MK 1	34	TOI1	2.8	11.3
237	FO-25030	1	1	3	54	609799.13	4051067.42	155mm TP	0.22	609799.19	4051067.40	40	Projectile, 155mm, shrapnel, MK 1	34	TOI1	14.5	6.8
258	FO-25268	1	1	3	49	609835.92	4051057.07	155mm #4-b TP	0.24	609836.02	4051057.07	40	Seeded Item	75	TOI1	9.5	10.1
295	FO-10089	1	1	3	63	608635.35	4051092.18	155mm #4-b TP	0.26	608635.35	4051092.18	50	Seeded Item (SAME AS 10002, SAME AS 10194))	64	TOI1	13.4	0.6
301	FO-35002	1	1	3	50	609650.51	4051216.53	155mm TP	0.26	609650.50	4051216.39	40	Seeded Item	50	TOI1	9.9	14.0
333	FO-10002	1	1	3	57	608635.42	4051091.96	155mm TP	0.28	608635.28	4051091.92	50	Seeded Item (SAME AS 10089, SAME AS 10194)	64	TOI1	7.4	13.7
394	FO-26370	1	1	3	51	609838.19	4051072.34	155mm #4-b TP	0.33	609838.18	4051072.33	36	Projectile, 155mm, shrapnel, MK 1	28	TOI1	14.8	1.8
439	FO-20003	1	1	3	39	609822.85	4051047.91	155mm #4-b TP	0.35	609822.90	4051047.82	35	Projectile, 155mm, shrapnel, MK 1	50	TOI1	4.2	10.6
585	FO-20009	1	1	3	55	609842.06	4051046.12	155mm #4-b TP	0.41	609842.06	4051046.12	50	Projectile, 155mm, shrapnel, MK 1 (SAME AS 20498-5)	37	TOI1	5.2	0.5
827	FO-25002	1	1	3	55	609841.93	4051074.85	155mm #4-b TP	0.50	609841.98	4051074.90	42	Projectile, 155mm, shrapnel, MK 1	34	TOI1	13.0	6.9
1047	FO-25713	1	1	1	71	609839.20	4051071.34	155mm #4-b TP	0.59	609839.05	4051071.46	52	Projectile, 155mm, shrapnel, MK 1	28	TOI1	19.4	19.3
1061	FO-20051	1	1	2	33	609827.18	4051025.73	105 Projo	0.74	609827.19	4051025.76	30	Seeded Item (SAME AS 20005)	30	TOI1	2.7	3.3
1383	FO-50048	1	1	3	34	609708.23	4051116.78	Stokes Mtr TP	0.67	609708.29	4051116.57	42	Projectile, 155mm, shrapnel, MK 1	34	TOI1	8.4	22.1
2	FO-50072	-1	1	2	50	609725.42	4051224.60	105 Projo	0.60	609725.50	4051224.28	33	Projectile, 60mm, mortar, high explosive, M49 series	26	TOI2	17.3	33.7
3	FO-25047	-1	1	2	23	609840.34	4051078.98	75mm 2	0.22	609840.34	4051078.98	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	0.7
4	FO-10183	-1	1	2	28	608663.86	4051085.62	81mm Illum	0.54	608663.92	4051085.55	30	Projectile, 81mm, mortar, illumination, M301 series	24	TOI2	1.6	8.9
5	FO-10219	-1	1	1	15	608632.91	4051075.86	37mm	0.33	608632.79	4051075.71	14	Seeded Item (SAME AS 11044)	12	TOI2	1.2	19.2
6	FO-10114	-1	1	1	8	608625.97	4051087.89	37mm	0.44	608626.02	4051087.98	6	Projectile, 37mm, low explosive, MK I	9.5	TOI2	1.9	10.8
7	FO-10013	-1	1	1	14	608630.58	4051094.55	40mm TP	0.80	608630.58	4051094.64	13	Projectile, 40mm, practice, M918	8	TOI2	1.3	8.8
8	FO-10139	-1	1	1	16	608647.85	4051090.91	40mm TP	0.71	608647.85	4051090.91	14	Projectile, 40mm, practice, M918 (SAME AS 11863)	8	TOI2	1.9	0.2
13	FO-25058	-1	1	2	22	609814.77	4051074.02	81mm TP	0.53	609814.79	4051073.97	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.8	5.8
15	FO-10028	-1	1	1	14	608625.95	4051096.00	37mm	0.57	608625.84	4051095.85	9	Projectile, 40mm, practice, M918 (SAME AS 10436-1)	8	TOI2	5.5	18.8
18	FO-10023	-1	1	1	5	608623.05	4051079.90	40mm TP	0.90	608622.97	4051079.80	7	Projectile, 40mm, practice, M918	8	TOI2	1.5	12.4
22	FO-30025	-1	1	2	58	609674.57	4051181.29	81mm TP	0.49	609674.57	4051181.29	22	Projectile, 37mm, practice, MK II	12	TOI2	35.9	0.4
87	FO-10027	1	1	3	77	608659.84	4051108.98	105 Projo	0.27	608659.97	4051108.84	95	Projectile, 105mm, illumination, M314 series	45	TOI2	18.5	18.6
88	FO-10008	1	1	3	66	608623.97	4051081.22	105 Projo	0.32	608623.68	4051081.28	73	Projectile, 4.2inch, mortar, illumination, M335 series (SAME AS 11121, SAME AS 10365)	45	TOI2	6.5	29.3
89	FO-10365	1	1	3	70	608623.77	4051081.11	105 Projo	0.22	608623.68	4051081.28	73	Projectile, 4.2inch, mortar, illumination, M335 series (SAME AS 11121, SAME AS 10008)	45	TOI2	2.8	19.5

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
92	FO-41376	1	1	2	12	608317.49	4051064.91	81mm TP	0.36	608317.54	4051064.83	10	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.5	8.9
94	FO-10203	1	1	2	21	608651.64	4051074.85	Med ISO TP	0.22	608651.70	4051074.60	20	Seeded Item (SAME AS 11610, SAME AS 10007))	20	TOI2	0.9	25.4
95	FO-50025	1	1	2	13	609663.08	4051293.42	81mm Illum	0.36	609662.97	4051293.29	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.3	17.0
98	FO-50128	1	1	2	19	609802.42	4051265.43	81mm Illum	0.89	609802.39	4051265.44	16	Projectile, 81mm, mortar, illumination, M301 series	24	TOI2	3.2	3.2
100	FO-35025	1	1	2	32	609672.89	4051205.86	81mm TP	0.25	609672.82	4051205.82	30	Seeded Item	29	TOI2	1.8	7.6
102	FO-25077	1	1	2	22	609790.19	4051038.21	81mm TP	0.31	609790.17	4051038.22	19	Seeded Item	29	TOI2	2.9	2.6
103	FO-50017	1	1	2	12	609639.72	4051010.86	81mm Illum	0.69	609639.71	4051010.86	24	Projectile, 81mm, mortar, illumination, M301 series	32	TOI2	11.8	1.4
106	FO-40104	1	1	1	18	608242.33	4051105.67	37mm	0.39	608242.31	4051105.67	19	Seeded Item	11	TOI2	1.4	2.2
108	FO-40258	1	1	1	15	608297.38	4051079.90	Sm ISO 9cm	0.58	608297.36	4051079.86	15	Seeded Item	10	TOI2	0.4	4.6
110	FO-25977	1	1	2	12	609834.46	4051081.42	81mm TP	0.23	609834.41	4051081.34	9	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.4	8.7
112	FO-50019	1	1	3	61	609636.92	4051246.77	155mm TP	0.16	609636.79	4051246.75	64	Projectile, 155mm, shrapnel, MK 1	34	TOI2	2.5	13.2
113	FO-10049	1	1	1	13	608654.63	4051111.38	37mm	0.27	608654.65	4051111.40	4	Seeded Item	11	TOI2	9.2	3.3
115	FO-35999	1	1	2	24	609632.47	4051198.76	81mm Illum	0.23	609632.45	4051198.76	18	Seeded Item (SAME AS 35089)	20	TOI2	6.3	2.7
116	FO-11610	1	1	2	21	608651.69	4051074.70	Med ISO TP	0.24	608651.55	4051074.63	20	Seeded Item (SAME AS 10007, SAME AS 10203)	20	TOI2	1.1	16.1
117	FO-50003	1	1	2	30	609500.72	4051334.71	75mm 2	0.32	609500.79	4051334.63	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.3	11.1
118	FO-20367	1	1	2	33	609821.32	4051054.77	81mm TP	0.35	609821.36	4051054.69	20	Projectile, 75mm, Shrapnel, MK I (SAME AS 25118-1)	23	TOI2	12.8	8.6
120	FO-10041	1	1	1	6	608647.86	4051083.36	37mm	0.10	608647.86	4051083.36	8	Projectile, 37mm, armor piercing tracer, M74 (SAME AS 10510)	13	TOI2	2.2	0.3
121	FO-35004	1	1	3	46	609625.74	4051209.00	105 Projo	0.16	609625.74	4051209.24	18	Projectile, 75mm, Shrapnel, MK I	23	TOI2	28.0	24.4
122	FO-50090	1	1	2	16	609757.98	4051153.20	81mm TP	0.30	609757.88	4051153.03	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.3	19.4
123	FO-11044	1	1	1	16	608632.90	4051075.61	37mm	0.40	608632.90	4051075.61	14	Seeded Item (SAME AS 10219)	12	TOI2	1.8	0.2
126	FO-10007	1	1	2	20	608651.71	4051074.49	Med ISO 26cm	0.29	608651.85	4051074.72	20	Seeded Item (SAME AS 11610, SAME AS 10203)	20	TOI2	0.3	27.2
128	FO-35205	1	1	3	70	609603.19	4051198.25	Lg ISO 75cm	0.24	609603.30	4051198.11	50	Projectile, 75mm, Shrapnel, MK I	23	TOI2	19.6	17.9
131	FO-30006	1	1	2	26	609672.01	4051172.96	81mm TP	0.32	609671.97	4051172.96	19	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.6	4.1
133	FO-50079	1	1	2	24	609739.56	4051074.42	81mm TP	0.30	609739.45	4051074.49	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.2	13.2
135	FO-25324	1	1	2	22	609837.59	4051071.08	81mm TP	0.37	609837.56	4051071.05	6	Projectile, 75mm, Shrapnel, MK I	23	TOI2	16.4	3.6
136	FO-50082	1	1	2	34	609740.64	4051127.79	81mm TP	0.35	609740.63	4051127.54	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.2	24.9
137	FO-50022	1	1	2	25	609658.31	4051034.18	81mm TP	0.31	609658.32	4051034.12	22	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.7	6.0
138	FO-50110	1	1	2	28	609784.64	4051017.15	81mm TP	0.32	609784.71	4051017.10	29	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.0	8.4
140	FO-35089	1	1	2	25	609632.47	4051198.71	81mm Illum	0.20	609632.43	4051198.74	18	Seeded Item (SAME AS 35999)	20	TOI2	7.2	5.2
141	FO-50055	1	1	2	17	609709.33	4051219.60	81mm TP	0.29	609709.21	4051219.38	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.1	24.7
145	FO-25040	1	1	2	17	609809.57	4051043.18	81mm TP	0.25	609809.55	4051043.18	9	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.6	1.5
147	FO-50073	1	1	2	34	609727.97	4051202.95	81mm TP	0.29	609727.94	4051202.92	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.7	4.4
148	FO-20004	1	1	2	20	609815.95	4051040.58	81mm TP	0.27	609815.97	4051040.63	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.7	5.2
149	FO-20047	1	1	2	26	609833.37	4051038.97	81mm TP	0.35	609833.25	4051039.07	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.3	16.0
150	FO-50027	1	1	2	27	609668.08	4051258.62	81mm TP	0.34	609668.08	4051258.68	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.0	5.5
151	FO-10260	1	1	2	33	608653.10	4051093.83	81mm TP	0.51	608653.16	4051093.78	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.4	8.2
152	FO-40122	1	1	1	14	608229.04	4051105.04	37mm	0.24	608229.01	4051105.07	12	Seeded Item	11	TOI2	1.7	4.3
154	FO-25067	1	1	2	20	609836.57	4051067.34	81mm TP	0.36	609836.59	4051067.31	10	Projectile, 75mm, Shrapnel, MK I	23	TOI2	9.9	3.9
156	FO-25081	1	1	2	22	609801.54	4051060.21	81mm TP	0.36	609801.56	4051060.19	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.4	2.6
157	FO-20017	1	1	2	29	609841.01	4051046.53	81mm TP	0.26	609841.03	4051046.47	20	Projectile, 75mm, Shrapnel, MK I (SAME AS 20404)	23	TOI2	9.1	5.9
158	FO-40033	1	1	2	33	608296.34	4051061.83	75mm 2	0.36	608296.35	4051061.76	34	Projectile, 75mm, Shrapnel, MK I (SAME AS 40066)	23	TOI2	0.8	7.7
159	FO-25052	1	1	2	27	609799.81	4051081.65	81mm TP	0.32	609799.82	4051081.58	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.1	7.2
160	FO-50043	1	1	2	29	609703.48	4051060.51	81mm TP	0.33	609703.49	4051060.42	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.8	9.4
161	FO-41361	1	1	2	12	608261.83	4051085.29	81mm Illum	0.36	608261.74	4051085.35	8	Projectile, 75mm, Shrapnel, MK I (SAME AS 40013)	23	TOI2	4.1	11.0
162	FO-35043	1	1	2	35	609629.96	4051184.66	81mm TP	0.26	609629.96	4051184.66	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.9	0.4
166	FO-50014	1	1	2	22	609624.82	4051278.85	81mm TP	0.35	609624.83	4051278.79	18	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.3	6.4
167	FO-40171	1	1	1	10	608231.13	4051086.04	40mm TP	0.35	608231.13	4051086.08	8	Projectile, 40mm, practice, M918	8	TOI2	2.5	3.9
168	FO-50068	1	1	2	29	609726.47	4051048.07	81mm Illum	0.21	609726.44	4051048.08	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	9.4	4.0
170	FO-50087	1	1	2	21	609745.59	4051254.90	75mm 2	0.33	609745.72	4051254.85	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.3	13.7
171	FO-50074	1	1	2	28	609733.05	4051101.07	81mm TP	0.35	609732.89	4051100.98	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.2	18.9
174	FO-20042	1	1	2	23	609831.26	4051053.75	75mm 2	0.56	609831.26	4051053.66	28	Projectile, 75mm, Shrapnel, MK I (SAME AS 20585)	21	TOI2	5.4	9.3
176	FO-35024	1	1	2	21	609657.72	4051218.77	75mm 2	0.29	609657.65	4051218.73	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.3	8.7
177	FO-40080	1	1	1	10	608237.02	4051090.64	37mm	0.48	608236.98	4051090.67	3	Projectile, 37mm, low explosive, MK II	12	TOI2	7.5	4.4
178	FO-35194	1	1	2	21	609626.93	4051218.28	75mm 2	0.20	609626.92	4051218.25	19	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.6	3.1

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
179	FO-20585	1	1	2	34	609831.25	4051053.55	81mm TP	0.36	609831.26	4051053.66	28	Projectile, 75mm, Shrapnel, MK I (SAME AS 20042)	21	TOI2	5.6	11.1
182	FO-10510	1	1	1	8	608647.83	4051083.23	37mm	0.15	608647.73	4051083.27	8	Projectile, 37mm, armor piercing tracer, M74 (SAME AS 10041)	13	TOI2	0.0	11.1
183	FO-10138	1	1	1	12	608626.96	4051098.73	40mm TP	0.40	608626.92	4051098.71	6	Projectile, 40mm, practice, M918	8	TOI2	6.1	4.4
185	FO-50123	1	1	2	21	609795.48	4051208.45	81mm TP	0.37	609795.39	4051208.31	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.0	17.0
186	FO-50106	1	1	2	38	609771.37	4051213.36	81mm TP	0.35	609771.33	4051213.37	35	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.1	3.6
187	FO-40066	1	1	2	33	608296.35	4051061.85	75mm 2	0.35	608296.35	4051061.76	34	Projectile, 75mm, Shrapnel, MK I (SAME AS 40033)	23	TOI2	1.2	9.3
189	FO-50146	1	1	2	22	609837.48	4051284.25	81mm TP	0.27	609837.48	4051284.25	26	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.6	0.3
190	FO-40113	1	1	1	7	608226.36	4051061.35	40mm TP	0.34	608226.33	4051061.35	4	Projectile, 40mm, practice, M918	8	TOI2	3.2	3.0
191	FO-10180	1	1	1	10	608626.62	4051118.70	40mm TP	0.41	608626.58	4051118.72	6	Projectile, 40mm, practice, M918	8	TOI2	4.0	4.6
192	FO-25078	1	1	2	18	609808.88	4051032.53	81mm TP	0.38	609808.78	4051032.50	13	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.9	10.4
197	FO-25131	1	1	2	27	609793.99	4051080.18	81mm TP	0.43	609793.98	4051080.16	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	2.2
198	FO-40324	1	1	2	13	608279.78	4051061.81	81mm Illum	0.38	608279.75	4051061.78	8	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.1	4.4
199	FO-25066	1	1	2	20	609801.49	4051035.70	81mm TP	0.34	609801.50	4051035.68	9	Projectile, 75mm, Shrapnel, MK I	23	TOI2	11.3	3.1
200	FO-25003	1	1	3	22	609835.75	4051077.37	75mm 2	0.18	609835.77	4051077.30	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.7	7.7
201	FO-10001	1	1	2	22	608682.91	4051069.23	75mm 2	0.46	608682.92	4051069.17	10	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.2	5.9
204	FO-10090	1	1	1	7	608643.75	4051116.26	40mm TP	0.57	608643.75	4051116.21	7	Projectile, 40mm, practice, M918	8	TOI2	0.5	4.9
205	FO-25183	1	1	3	47	609815.06	4051083.03	105 Projo	0.23	609815.10	4051082.96	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	17.3	8.6
206	FO-25024	1	1	2	29	609838.92	4051075.57	81mm TP	0.34	609839.02	4051075.50	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.8	12.8
207	FO-20026	1	1	2	28	609832.42	4051038.52	81mm TP	0.40	609832.42	4051038.46	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.0	5.3
208	FO-50088	1	1	3	45	609754.98	4051056.87	105 Projo	0.37	609755.01	4051056.75	45	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.3	12.8
209	FO-50031	1	1	2	13	609680.51	4051104.60	81mm Illum	0.68	609680.46	4051104.44	20	Projectile, 81mm, mortar, illumination, M301 series	24	TOI2	6.6	16.6
210	FO-25392	1	1	2	18	609805.90	4051038.26	81mm TP	0.40	609805.90	4051038.23	19	Projectile, 75mm, Shrapnel, MK I (SAME AS 25649)	23	TOI2	0.5	3.3
212	FO-36568	1	1	2	48	609610.62	4051177.72	81mm TP	0.44	609610.56	4051177.68	34	Seeded Item	20	TOI2	14.0	7.2
213	FO-25013	1	1	2	13	609835.13	4051084.56	81mm TP	0.33	609835.09	4051084.58	10	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.3	4.6
214	FO-35790	1	1	1	7	609605.20	4051167.44	37mm	0.24	609605.09	4051167.36	2	Projectile, 37mm, low explosive, MK II	10	TOI2	4.5	14.2
217	FO-40124	1	1	2	31	608241.30	4051060.70	81mm TP	0.38	608241.28	4051060.65	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.1	5.3
218	FO-50138	1	1	2	26	609819.54	4051168.99	81mm TP	0.37	609819.46	4051168.88	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.3	13.3
219	FO-40706	1	1	2	19	608263.72	4051097.68	75mm 2	0.32	608263.64	4051097.66	15	Projectile, 75mm, Shrapnel, MK I (SAME AS 40007 & 40333)	23	TOI2	4.3	8.6
220	FO-20002	1	1	2	18	609821.34	4051053.57	75mm 2	0.22	609821.36	4051053.51	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.6	6.1
221	FO-50049	1	1	2	21	609707.44	4051149.66	81mm TP	0.36	609707.32	4051149.63	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.7	12.5
222	FO-50024	1	1	2	30	609666.91	4051065.57	81mm TP	0.38	609666.70	4051065.55	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.7	20.6
223	FO-40044	1	1	2	31	608278.13	4051073.18	75mm 2	0.24	608278.26	4051073.15	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	9.2	12.9
225	FO-25179	1	1	2	33	609802.71	4051080.53	81mm TP	0.37	609802.66	4051080.46	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.8	9.4
226	FO-50120	1	1	2	17	609792.48	4051181.41	75mm 2	0.40	609792.23	4051181.25	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.7	29.5
227	FO-40038	1	1	2	24	608285.66	4051058.89	75mm 2	0.31	608285.69	4051058.72	26	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.3	16.9
229	FO-40071	1	1	2	36	608235.05	4051065.81	75mm TP	0.31	608235.12	4051065.87	30	Seeded Item	20	TOI2	6.4	9.0
230	FO-25088	1	1	2	29	609805.44	4051031.65	81mm TP	0.38	609805.44	4051031.58	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.0	6.7
231	FO-50033	1	1	2	17	609687.62	4051051.31	75mm 2	0.41	609687.58	4051051.37	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.8	7.2
232	FO-25649	1	1	2	19	609805.90	4051038.28	81mm TP	0.30	609805.90	4051038.22	19	Projectile, 75mm, Shrapnel, MK I (SAME AS 25392)	23	TOI2	0.4	6.9
235	FO-50010	1	1	2	19	609603.36	4051234.39	75mm 2	0.21	609603.35	4051234.50	22	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	10.8
236	FO-35020	1	1	2	29	609652.13	4051205.97	81mm Illum	0.32	609652.24	4051206.02	20	Seeded Item	20	TOI2	8.7	12.2
238	FO-30007	1	1	2	24	609656.98	4051173.43	Med ISO TP	0.31	609656.89	4051173.39	20	Seeded Item	20	TOI2	3.9	9.2
239	FO-50108	1	1	2	35	609773.69	4051199.21	81mm TP	0.34	609773.60	4051199.16	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.2	10.6
240	FO-40956	1	1	2	24	608279.38	4051087.69	75mm 2	0.38	608279.51	4051087.71	29	Projectile, 75mm, Shrapnel, MK I (SAME AS 40040 & 40325)	23	TOI2	5.4	13.7
241	FO-40135	1	1	1	7	608226.45	4051074.43	40mm TP	0.34	608226.43	4051074.44	4	Projectile, 40mm, practice, M918	8	TOI2	3.2	2.9
242	FO-40552	1	1	2	21	608259.86	4051083.20	75mm 2	0.34	608259.80	4051083.19	12	Projectile, 75mm, Shrapnel, MK I (SAME AS 40018 & 40133)	23	TOI2	8.9	6.2
243	FO-10058	1	1	2	26	608637.38	4051075.66	75mm 2	0.45	608637.27	4051076.46	10	Projectile, 40mm, practice, M918	8	TOI2	15.6	80.6
244	FO-10179	1	1	1	12	608622.58	4051074.55	40mm TP	0.41	608622.61	4051074.59	9	Projectile, 40mm, practice, M918	8	TOI2	3.2	5.6
246	FO-41326	1	1	1	14	608271.50	4051063.57	40mm TP	0.35	608271.47	4051063.56	12	Projectile, 40mm, practice, M918	8	TOI2	2.4	3.3
249	FO-50036	1	1	2	20	609692.59	4051053.11	81mm TP	0.51	609692.60	4051053.02	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.4	9.5
250	FO-50005	1	1	2	22	609538.38	4051249.69	75mm 2	0.33	609538.36	4051249.64	22	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.1	5.2
251	FO-26490	1	1	2	36	609796.92	4051026.77	81mm TP	0.52	609796.91	4051026.76	37	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.2	1.5
252	FO-40012	1	1	2	27	608260.37	4051078.44	81mm TP	0.32	608260.38	4051078.44	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.9	0.9
254	FO-10024	1	1	1	9	608622.64	4051068.22	40mm TP	0.60	608622.66	4051068.32	9	Projectile, 40mm, practice, M918	8	TOI2	0.1	9.6

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
259	FO-35012	1	1	2	28	609656.29	4051223.31	81mm TP	0.30	609656.28	4051223.30	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.9	1.0
260	FO-25109	1	1	2	26	609791.84	4051064.24	81mm TP	0.38	609791.79	4051064.28	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.4	6.5
261	FO-40013	1	1	2	9	608261.69	4051085.40	81mm Illum	0.33	608261.76	4051085.34	8	Projectile, 75mm, Shrapnel, MK I (SAME AS 41361)	23	TOI2	1.4	8.9
262	FO-30004	1	1	2	45	609667.25	4051174.21	81mm TP	0.41	609667.16	4051174.23	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	15.0	9.4
263	FO-35522	1	1	2	16	609651.40	4051200.24	75mm 2	0.32	609651.45	4051200.12	4	Projectile, 75mm, Shrapnel, MK I (SAME AS 35029)	23	TOI2	12.0	13.3
264	FO-30014	1	1	2	25	609661.15	4051178.63	Med ISO TP	0.32	609661.10	4051178.58	28	Seeded Item	20	TOI2	2.6	7.1
265	FO-20016	1	1	2	25	609816.36	4051039.71	81mm TP	0.37	609816.41	4051039.75	21	Projectile, 75mm, Shrapnel, MK I	29	TOI2	3.9	6.0
267	FO-50013	1	1	2	14	609620.63	4051100.41	75mm 2	0.33	609620.61	4051100.34	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.5	7.3
270	FO-35129	1	1	2	29	609645.19	4051225.21	81mm TP	0.29	609645.18	4051225.15	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	9.1	6.2
271	FO-35029	1	1	2	14	609651.44	4051200.16	81mm TP	0.30	609651.44	4051200.13	4	Projectile, 75mm, Shrapnel, MK I (SAME AS 35522)	23	TOI2	10.4	3.5
272	FO-20012	1	1	2	35	609829.54	4051032.41	81mm TP	0.43	609829.53	4051032.32	34	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.5	9.4
273	FO-10130	1	1	1	10	608680.92	4051125.52	40mm TP	0.52	608680.91	4051125.49	2	Projectile, 40mm, practice, M918	8	TOI2	8.5	3.1
274	FO-11203	1	1	2	28	608627.31	4051078.96	81mm TP	0.45	608627.11	4051079.13	30	Projectile, 75mm, Shrapnel, MK I (SAME AS 10009)	23	TOI2	1.9	26.5
276	FO-35039	1	1	2	34	609603.61	4051224.41	81mm TP	0.39	609603.63	4051224.48	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.1	7.9
278	FO-35038	1	1	2	32	609681.60	4051206.03	81mm Illum	0.23	609681.60	4051206.04	30	Seeded Item	29	TOI2	1.9	1.0
279	FO-25089	1	1	2	20	609824.26	4051070.02	81mm TP	0.39	609824.20	4051069.96	18	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.8	8.0
280	FO-35018	1	1	2	18	609596.25	4051171.64	75mm 2	0.30	609596.24	4051171.56	6	Projectile, 75mm, high explosive, MK I	23	TOI2	12.0	7.9
281	FO-40207	1	1	2	31	608272.80	4051085.22	81mm TP	0.36	608272.73	4051085.15	26	Projectile, 75mm, Shrapnel, MK I (SAME AS 40021 & 41166)	23	TOI2	5.2	9.9
282	FO-25128	1	1	2	24	609782.98	4051078.48	75mm 2	0.34	609782.99	4051078.33	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.4	15.2
283	FO-25073	1	1	2	21	609793.73	4051077.11	75mm 2	0.46	609793.80	4051077.06	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	9.0	9.3
284	FO-50150	1	1	3	43	609861.78	4051149.26	105 Projo	0.23	609862.45	4051149.50	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.8	71.4
285	FO-36009	1	1	3	57	609656.42	4051225.97	105 Projo	0.30	609656.43	4051225.89	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	16.8	7.9
286	FO-50083	1	1	2	17	609743.60	4051072.17	75mm 2	0.41	609743.58	4051072.12	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.7	5.6
287	FO-40032	1	1	2	32	608245.40	4051081.10	81mm TP	0.29	608245.40	4051081.09	29	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.5	1.6
288	FO-40115	1	1	1	10	608273.99	4051068.99	40mm TP	0.64	608274.03	4051068.97	4	Projectile, 40mm, practice, M918	8	TOI2	6.0	4.2
289	FO-10211	1	1	1	7	608643.06	4051081.90	40mm TP	0.41	608643.01	4051081.85	5	Projectile, 40mm, practice, M918	8	TOI2	2.0	6.9
290	FO-50069	1	1	2	19	609723.22	4051178.76	81mm TP	0.40	609723.14	4051178.73	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.9	8.1
292	FO-50097	1	1	2	14	609765.96	4051051.90	81mm TP	0.42	609765.96	4051051.75	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.7	15.1
293	FO-40454	1	1	2	29	608293.32	4051069.37	75mm TP	0.38	608293.34	4051069.31	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	8.6	6.7
294	FO-35028	1	1	3	58	609613.49	4051191.38	Lg ISO 75cm	0.27	609613.49	4051191.38	38	Projectile, 75mm, Shrapnel, MK I	23	TOI2	20.0	0.1
296	FO-25487	1	1	2	26	609809.84	4051083.65	75mm 2	0.24	609809.94	4051083.70	29	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.7	10.4
297	FO-11213	1	1	2	37	608656.92	4051093.13	57mm TP	0.37	608656.93	4051093.16	40	Seeded Item	17	TOI2	2.8	3.1
299	FO-40018	1	1	2	21	608259.81	4051083.19	75mm TP	0.39	608259.79	4051083.20	12	Projectile, 75mm, Shrapnel, MK I (SAME AS 40552 & 40133)	23	TOI2	8.8	1.5
300	FO-40325	1	1	2	23	608279.57	4051087.80	75mm 2	0.50	608279.51	4051087.72	29	Projectile, 75mm, Shrapnel, MK I (SAME AS 40040 & 40956)	23	TOI2	5.7	10.2
303	FO-25022	1	1	2	29	609814.27	4051067.65	81mm TP	0.44	609814.22	4051067.51	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.2	14.7
304	FO-50080	1	1	2	24	609739.33	4051116.96	81mm TP	0.42	609739.33	4051116.95	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.3	0.6
306	FO-10201	1	1	2	41	608648.91	4051083.73	81mm TP	0.38	608648.99	4051083.78	30	Projectile, 75mm, Shrapnel, MK I (SAME AS 10010)	23	TOI2	10.7	9.7
307	FO-50077	1	1	2	29	609737.00	4051077.87	81mm TP	0.39	609736.99	4051077.83	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.5	4.4
308	FO-25118	1	1	2	25	609821.35	4051054.86	81mm TP	0.31	609821.36	4051054.69	20	Projectile, 75mm, Shrapnel, MK I (SAME AS 20367-1)	23	TOI2	4.8	16.9
309	FO-35155	1	1	1	6	609636.69	4051187.58	37mm	0.28	609636.60	4051187.52	7	Seeded Item	11	TOI2	1.0	11.1
312	FO-40017	1	1	2	10	608269.77	4051054.94	75mm 2	0.29	608269.72	4051054.89	8	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.8	6.6
313	FO-40367	1	1	1	17	608258.90	4051075.28	40mm TP	0.65	608258.93	4051075.26	10	Projectile, 40mm, practice, M918	8	TOI2	6.6	2.6
315	FO-40014	1	1	2	20	608276.13	4051074.60	81mm TP	0.42	608276.15	4051074.53	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.5	7.3
317	FO-35019	1	1	3	43	609615.10	4051190.52	105 Projo	0.22	609615.29	4051190.49	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.8	19.1
318	FO-10167	1	1	1	9	608647.38	4051080.79	40mm TP	0.55	608647.32	4051080.77	9	Projectile, 40mm, practice, M918	8	TOI2	0.3	6.6
319	FO-50061	1	1	2	37	609716.48	4051167.63	81mm TP	0.47	609716.41	4051167.50	37	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.4	15.1
320	FO-10424	1	1	1	8	608677.04	4051128.93	40mm TP	0.64	608677.03	4051128.94	2	Projectile, 40mm, practice, M918	8	TOI2	5.7	1.2
321	FO-25123	1	1	2	32	609831.96	4051070.74	81mm TP	0.47	609832.03	4051070.76	29	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.7	6.8
323	FO-40015	1	1	2	27	608263.53	4051078.73	81mm TP	0.32	608263.61	4051078.75	26	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.5	8.0
324	FO-10238	1	1	1	7	608626.30	4051079.72	40mm TP	0.62	608626.20	4051079.80	5	Projectile, 40mm, practice, M918	8	TOI2	1.7	13.2
325	FO-40008	1	1	3	60	608284.28	4051075.97	155mm TP	0.27	608284.14	4051075.93	60	Seeded Item	64	TOI2	0.1	14.1
326	FO-50149	1	1	2	28	609852.02	4051292.94	81mm TP	0.43	609851.96	4051292.89	34	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.1	7.5
328	FO-40037	1	1	2	31	608290.94	4051074.04	81mm TP	0.28	608290.99	4051074.01	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.9	6.3
329	FO-10012	1	1	2	32	608676.21	4051088.28	75mm 2	0.14	608676.37	4051088.34	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.0	17.5

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
330	FO-37157	1	1	2	29	609652.31	4051219.35	75mm 2	0.41	609652.29	4051219.25	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.0	9.6
331	FO-10062	1	1	1	9	608636.30	4051105.96	40mm TP	0.42	608636.26	4051105.97	2	Projectile, 40mm, practice, M918	8	TOI2	6.8	3.9
334	FO-40239	1	1	1	7	608236.76	4051050.71	40mm TP	0.28	608236.75	4051050.63	4	Projectile, 40mm, practice, M918	8	TOI2	2.9	8.3
335	FO-50086	1	1	2	29	609742.80	4051219.71	105 Projo	0.37	609742.80	4051219.64	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	13.8	6.6
336	FO-35042	1	1	2	30	609631.25	4051218.16	81mm TP	0.40	609631.27	4051218.07	29	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.3	9.3
339	FO-40077	1	1	1	8	608236.68	4051089.83	37mm	0.40	608236.71	4051089.78	4	Projectile, 37mm, low explosive, MK I	10	TOI2	3.9	5.8
341	FO-10006	1	1	2	24	608643.67	4051108.34	81mm TP	0.46	608643.66	4051108.25	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	9.0
344	FO-40133	1	1	2	18	608259.83	4051083.24	75mm 2	0.32	608259.81	4051083.17	12	Projectile, 75mm, Shrapnel, MK I (SAME AS 40018 & 40552)	23	TOI2	6.0	6.7
345	FO-11726	1	1	2	26	608637.20	4051075.42	81mm TP	0.43	608636.98	4051075.66	25	Projectile, 75mm, Shrapnel, MK I (SAME AS 10014, SAME AS 11776)	23	TOI2	1.2	32.7
348	FO-40029	1	1	2	25	608276.17	4051069.24	75mm TP	0.39	608276.22	4051069.27	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.4	6.0
350	FO-50118	1	1	2	25	609785.89	4051259.00	75mm 2	0.41	609785.90	4051258.99	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.3	1.9
352	FO-50007	1	1	2	39	609576.36	4051299.25	81mm TP	0.44	609576.30	4051299.19	32	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.5	8.4
354	FO-10263	1	1	1	12	608628.27	4051070.48	40mm TP	0.47	608628.29	4051070.53	9	Projectile, 40mm, practice, M918	8	TOI2	3.1	4.5
355	FO-10231	1	1	1	16	608665.99	4051112.36	40mm TP	0.48	608665.98	4051112.36	8	Seeded Item	8	TOI2	8.2	0.8
357	FO-35104	1	1	1	7	609661.39	4051203.65	37mm	0.22	609661.38	4051203.59	2	Projectile, 37mm, low explosive, MK II	11	TOI2	5.1	5.5
359	FO-50111	1	1	2	22	609779.89	4051159.05	81mm TP	0.41	609779.77	4051158.95	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.9	15.6
363	FO-50084	1	1	2	21	609742.92	4051122.82	81mm TP	0.54	609742.84	4051122.73	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.0	11.9
366	FO-35055	1	1	3	60	609615.89	4051188.13	105 Projo	0.33	609615.88	4051188.06	48	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.2	7.3
367	FO-10010	1	1	3	43	608649.01	4051083.86	105 Projo	0.36	608649.01	4051083.86	30	Projectile, 75mm, Shrapnel, MK I (SAME AS 10201)	23	TOI2	13.0	0.5
369	FO-40001	1	1	2	20	608253.57	4051072.40	81mm TP	0.44	608253.56	4051072.43	18	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.0	3.5
372	FO-40226	1	1	1	18	608249.35	4051078.90	Sm ISO 9cm	0.65	608249.40	4051078.94	20	Seeded Item	10	TOI2	2.2	6.0
373	FO-10316	1	1	1	15	608625.07	4051077.48	40mm TP	0.48	608625.11	4051077.59	10	Projectile, 40mm, practice, M918	8	TOI2	4.8	11.5
375	FO-50032	1	1	2	19	609679.35	4051130.51	75mm 2	0.38	609679.28	4051130.42	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.9	11.7
376	FO-50139	1	1	2	32	609814.14	4051308.29	81mm TP	0.41	609814.05	4051308.25	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.4	9.0
377	FO-25037	1	1	2	17	609828.11	4051074.86	75mm 2	0.21	609828.08	4051074.84	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.6	4.0
378	FO-35037	1	1	3	60	609628.26	4051196.44	Lg ISO TP	0.31	609628.28	4051196.37	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	29.8	8.1
379	FO-25168	1	1	2	21	609789.28	4051056.37	81mm TP	0.46	609789.27	4051056.36	22	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.7	2.0
380	FO-50051	1	1	2	28	609712.36	4051041.61	81mm TP	0.44	609712.34	4051041.57	24	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.6	4.8
382	FO-41166	1	1	2	25	608272.60	4051085.19	75mm TP	0.36	608272.73	4051085.15	26	Projectile, 75mm, Shrapnel, MK I (SAME AS 40207 & 40021)	23	TOI2	1.0	13.7
384	FO-25026	1	1	2	16	609793.80	4051079.55	75mm 2	0.40	609793.81	4051079.51	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.3	4.9
387	FO-10014	1	1	2	30	608637.14	4051075.64	81mm TP	0.37	608637.14	4051075.64	25	Projectile, 75mm, Shrapnel, MK I (SAME AS 11726, SAME AS 11776)	23	TOI2	5.0	0.6
388	FO-40021	1	1	2	25	608272.75	4051085.15	75mm TP	0.40	608272.74	4051085.15	26	Projectile, 75mm, Shrapnel, MK I (SAME AS 40207 & 41166)	23	TOI2	1.0	1.2
390	FO-25025	1	1	3	38	609804.67	4051082.34	105 Projo	0.31	609804.56	4051082.24	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	18.4	15.0
391	FO-40031	1	1	2	16	608287.63	4051090.42	75mm 2	0.24	608287.61	4051090.44	4	Projectile, 75mm, Shrapnel, MK I	18	TOI2	12.3	2.8
392	FO-40019	1	1	2	33	608277.14	4051062.08	75mm TP	0.32	608277.14	4051062.11	27	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.0	2.4
395	FO-35048	1	1	2	40	609632.18	4051189.13	81mm TP	0.33	609632.11	4051189.17	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.1	8.4
396	FO-40101	1	1	1	6	608273.17	4051060.12	40mm TP	0.81	608273.16	4051060.05	4	Projectile, 40mm, practice, M918	8	TOI2	2.0	7.0
397	FO-40025	1	1	2	15	608273.25	4051081.98	75mm 2	0.37	608273.22	4051081.95	10	Projectile, 75mm, Shrapnel, MK I (SAME AS 40106)	23	TOI2	5.0	3.9
398	FO-10181	1	1	1	99	608673.64	4051118.29	155mm TP	0.58	608672.91	4051118.40	2	Projectile, 40mm, practice, M918	8	TOI2	96.9	74.6
399	FO-40985	1	1	2	29	608295.31	4051069.95	81mm TP	0.37	608295.39	4051069.91	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.1	8.7
400	FO-50105	1	1	2	20	609769.60	4051248.12	81mm TP	0.46	609769.59	4051248.11	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	1.9
402	FO-20008	1	1	2	15	609839.16	4051043.97	75mm TP	0.45	609839.22	4051043.92	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.9	7.4
404	FO-40034	1	1	2	24	608279.80	4051066.29	81mm TP	0.42	608279.88	4051066.14	26	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.9	16.7
405	FO-10088	1	1	1	13	608630.52	4051070.05	40mm TP	0.40	608630.54	4051070.12	10	Projectile, 40mm, practice, M918	8	TOI2	2.7	7.1
407	FO-40254	1	1	1	11	608260.98	4051073.84	40mm TP	0.42	608261.03	4051073.79	15	Projectile, 40mm, practice, M918	8	TOI2	4.4	7.3
408	FO-50148	1	1	2	20	609843.28	4051250.11	75mm 2	0.33	609843.32	4051249.95	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.3	16.1
409	FO-40006	1	1	2	14	608277.57	4051059.38	81mm TP	0.50	608277.53	4051059.38	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.5	4.7
410	FO-40106	1	1	2	15	608273.28	4051081.95	75mm 2	0.33	608273.21	4051081.94	10	Projectile, 75mm, Shrapnel, MK I (SAME AS 40025	23	TOI2	5.0	7.3
411	FO-35016	1	1	2	33	609662.09	4051224.30	81mm TP	0.37	609662.09	4051224.26	35	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.6	3.5
412	FO-10766	1	1	1	5	608646.36	4051092.96	40mm TP	0.61	608646.65	4051093.29	8	Projectile, 40mm, practice, M918	8	TOI2	3.1	44.1
413	FO-40028	1	1	2	16	608243.72	4051094.16	75mm 2	0.38	608243.72	4051094.13	14	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.6	2.8
414	FO-40016	1	1	2	23	608295.15	4051090.30	81mm TP	0.42	608295.13	4051090.22	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	6.7	8.3

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
416	FO-10821	1	1	1	12	608623.50	4051098.28	40mm TP	0.52	608623.46	4051098.25	4	Projectile, 40mm, practice, M918	8	TOI2	7.9	5.1
417	FO-10116	1	1	1	11	608627.23	4051072.56	40mm TP	0.65	608627.22	4051072.62	7	Projectile, 40mm, practice, M918	8	TOI2	4.0	5.4
418	FO-40011	1	1	2	18	608293.39	4051063.21	75mm 2	0.39	608293.39	4051063.11	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.9	10.5
419	FO-50011	1	1	2	17	609606.47	4051258.97	75mm 2	0.32	609606.45	4051258.99	25	Projectile, 75mm, Shrapnel, MK I	23	TOI2	8.0	2.7
419	FO-50011	1	1	2	17	609606.47	4051258.97	75mm 2	0.32	609606.45	4051258.99	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.0	2.7
419	FO-50011	1	1	2	17	609606.47	4051258.97	75mm 2	0.32	609606.45	4051258.99	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.0	2.7
419	FO-50011	1	1	2	17	609606.47	4051258.97	75mm 2	0.32	609606.45	4051258.99	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.0	2.7
421	FO-10074	1	1	2	38	608626.87	4051079.15	81mm TP	0.39	608626.66	4051077.99	4	Projectile, 40mm, practice, M918 (SAME AS 11702)	8	TOI2	34.4	117.7
422	FO-50143	1	1	2	18	609830.08	4051265.42	75mm 2	0.32	609830.03	4051265.47	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.1	6.6
428	FO-40009	1	1	2	10	608265.32	4051053.31	75mm 2	0.43	608265.26	4051053.27	8	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.4	6.7
429	FO-25295	1	1	2	31	609795.80	4051063.92	75mm 2	0.38	609795.82	4051063.91	30	Seeded Item	17	TOI2	1.2	1.7
430	FO-35023	1	1	2	20	609608.91	4051170.12	81mm TP	0.46	609608.90	4051170.13	12	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.6	1.4
433	FO-10476	1	1	1	7	608623.02	4051080.46	40mm TP	0.45	608622.83	4051080.22	7	Projectile, 40mm, practice, M918 (SAME AS 10174)	8	TOI2	0.3	30.5
437	FO-50081	1	1	2	26	609733.66	4051256.64	81mm TP	0.47	609733.59	4051256.61	23	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.2	7.8
438	FO-10018	1	1	1	8	608646.37	4051093.15	40mm TP	0.49	608646.32	4051093.12	8	Projectile, 40mm, practice, M918	8	TOI2	0.4	5.6
442	FO-35933	1	1	3	75	609615.22	4051218.73	Lg ISO 75cm	0.40	609615.34	4051218.62	75	Projectile, 4.2inch, mortar, illumination, M335 series	44	TOI2	0.1	15.7
444	FO-10174	1	1	1	11	608622.92	4051080.41	40mm TP	0.54	608622.83	4051080.22	7	Projectile, 40mm, practice, M918 (SAME AS 10476)	8	TOI2	3.5	21.3
452	FO-10034	1	1	1	14	608629.65	4051070.98	40mm TP	0.40	608629.69	4051070.94	9	Projectile, 40mm, practice, M918	8	TOI2	5.1	5.6
455	FO-10091	1	1	1	4	608663.52	4051083.68	40mm TP	0.65	608663.46	4051083.65	2	Projectile, 40mm, practice, M918	8	TOI2	1.9	6.8
456	FO-35731	1	1	2	53	609594.72	4051211.46	81mm TP	0.34	609594.62	4051211.44	64	Projectile, 75mm, Shrapnel, MK I	23	TOI2	10.9	10.9
458	FO-50008	1	1	2	17	609588.37	4051273.15	81mm TP	0.47	609588.38	4051273.14	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.4	1.2
460	FO-25142	1	1	2	25	609795.33	4051070.44	81mm TP	0.48	609795.31	4051070.43	17	Projectile, 75mm, Shrapnel, MK I	23	TOI2	8.5	2.6
461	FO-10123	1	1	1	8	608643.79	4051072.44	40mm TP	0.97	608643.73	4051072.48	7	Projectile, 40mm, practice, M918	8	TOI2	0.5	6.9
466	FO-10389	1	1	1	14	608630.02	4051072.88	40mm TP	0.81	608629.98	4051072.88	8	Projectile, 40mm, practice, M918	8	TOI2	6.0	3.7
469	FO-40005	1	1	2	19	608235.72	4051050.98	81mm TP	0.40	608235.70	4051050.93	14	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.1	5.7
470	FO-50002	1	1	2	16	609498.15	4051275.27	81mm TP	0.45	609497.97	4051275.16	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.1	21.8
471	FO-10064	1	1	1	9	608627.35	4051115.55	40mm TP	0.47	608627.32	4051115.62	7	Projectile, 40mm, practice, M918	8	TOI2	2.3	7.6
475	FO-40168	1	1	1	10	608296.51	4051108.30	40mm TP	0.81	608296.48	4051108.26	14	Projectile, 40mm, practice, M918	8	TOI2	4.0	5.0
479	FO-35003	1	1	2	36	609652.53	4051179.78	81mm TP	0.45	609652.53	4051179.78	32	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.5	0.3
481	FO-11495	1	1	1	58	608623.44	4051081.50	75mm TP	0.59	608622.81	4051081.41	10	Projectile, 40mm, practice, M918	5	TOI2	47.8	63.2
482	FO-11388	1	1	1	6	608651.09	4051097.66	40mm TP	0.85	608651.10	4051097.65	2	Projectile, 40mm, practice, M918	8	TOI2	3.5	1.1
491	FO-10112	1	1	1	16	608642.18	4051102.48	40mm TP	0.49	608642.15	4051102.46	7	Projectile, 40mm, practice, M918	8	TOI2	8.8	3.0
492	FO-40027	1	1	2	21	608227.93	4051049.82	75mm 2	0.28	608227.96	4051049.81	13	Projectile, 75mm, high explosive, M48	13	TOI2	8.5	3.1
494	FO-35446	1	1	2	28	609635.50	4051226.78	81mm TP	0.42	609635.61	4051226.75	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	1.8	11.2
496	FO-10067	1	1	1	9	608621.95	4051088.89	40mm TP	0.68	608621.93	4051088.84	6	Projectile, 40mm, practice, M918	8	TOI2	3.1	5.1
498	FO-25069	1	1	2	26	609797.29	4051056.76	75mm 2	0.42	609797.29	4051056.76	15	Seeded Item	27	TOI2	10.8	0.4
501	FO-35431	1	1	3	93	609637.37	4051195.82	155mm #4-b TP	0.39	609637.43	4051195.68	97	Projectile, 155mm, high explosive, MK 3 (SAME AS 36372)	60	TOI2	4.4	14.8
503	FO-11863	1	1	1	16	608647.86	4051090.78	40mm TP	0.55	608647.86	4051090.78	14	Projectile, 40mm, practice, M918 (SAME AS 10139)	8	TOI2	1.8	0.5
504	FO-36372	1	1	3	89	609637.21	4051195.63	155mm #4-b TP	0.40	609637.43	4051195.68	97	Projectile, 155mm, high explosive, MK 3 (SAME AS 35431)	60	TOI2	7.6	22.8
510	FO-50028	1	1	2	16	609672.83	4051237.18	81mm TP	0.53	609672.81	4051237.14	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.6	4.9
513	FO-40082	1	1	1	11	608234.01	4051098.89	40mm TP	0.59	608234.00	4051098.93	9	Projectile, 40mm, practice, M918	8	TOI2	1.8	4.2
514	FO-11776	1	1	2	33	608637.02	4051075.92	81mm TP	0.41	608637.02	4051075.92	25	Projectile, 75mm, Shrapnel, MK I (SAME AS 11726)	23	TOI2	7.9	0.4
515	FO-40114	1	1	1	4	608275.51	4051093.39	40mm TP	0.46	608275.65	4051093.35	2	Projectile, 40mm, practice, M918	9	TOI2	1.6	13.6
516	FO-10145	1	1	1	7	608633.26	4051082.69	40mm TP	0.54	608633.19	4051082.74	6	Projectile, 40mm, practice, M918	8	TOI2	1.0	7.7
519	FO-50098	1	1	2	32	609763.01	4051169.45	75mm 2	0.47	609763.02	4051169.48	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	2.5	3.7
520	FO-50140	1	1	2	27	609818.74	4051276.84	81mm TP	0.52	609818.70	4051276.84	28	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.6	3.9
524	FO-10132	1	1	1	16	608623.55	4051085.05	40mm TP	0.64	608623.49	4051085.05	14	Projectile, 40mm, practice, M918	8	TOI2	1.7	6.6
525	FO-25036	1	1	2	27	609838.21	4051085.56	105 Projo	0.42	609838.15	4051085.55	16	Projectile, 75mm, Shrapnel, MK I	23	TOI2	10.6	6.9
528	FO-11702	1	1	1	6	608626.62	4051077.99	40mm TP	0.67	608626.66	4051077.99	4	Projectile, 40mm, practice, M918 (SAME AS 10074)	8	TOI2	1.9	4.0
529	FO-40227	1	1	1	13	608285.81	4051074.54	40mm TP	0.57	608285.80	4051074.54	3	Projectile, 40mm, practice, M918	8	TOI2	9.5	1.1
530	FO-40253	1	1	1	22	608284.06	4051101.89	40mm TP	0.51	608284.12	4051101.88	15	Projectile, 40mm, practice, M918	9	TOI2	6.5	6.2
535	FO-40007	1	1	2	20	608263.73	4051097.69	81mm TP	0.52	608263.64	4051097.66	15	Projectile, 75mm, Shrapnel, MK I (SAME AS 40706 & 40333)	23	TOI2	5.4	9.7
541	FO-11646	1	1	1	14	608635.92	4051067.10	40mm TP	0.58	608635.92	4051067.10	12	Projectile, 40mm, practice, M918 (SAME AS 10239)	8	TOI2	2.0	0.4
545	FO-10164	1	1	1	15	608624.08	4051113.00	40mm TP	0.44	608624.03	4051113.02	12	Projectile, 40mm, practice, M918	8	TOI2	2.7	5.7

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
548	FO-40022	1	1	2	40	608236.51	4051055.05	81mm TP	0.52	608236.48	4051054.90	37	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.3	15.8
549	FO-50009	1	1	2	17	609598.06	4051126.87	81mm TP	0.53	609597.99	4051126.80	20	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.4	10.4
550	FO-10157	1	1	1	12	608627.41	4051089.48	40mm TP	0.76	608627.40	4051089.50	19	Projectile, 40mm, practice, M918	8	TOI2	7.3	2.3
551	FO-35060	1	1	2	38	609634.43	4051171.06	81mm TP	0.43	609634.43	4051171.06	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.9	0.5
555	FO-40242	1	1	1	13	608281.70	4051096.41	40mm TP	0.73	608281.67	4051096.38	2	Projectile, 40mm, practice, M918	9	TOI2	11.0	3.6
557	FO-10271	1	1	1	20	608659.93	4051077.01	40mm TP	0.89	608659.87	4051077.03	19	Seeded Item	8	TOI2	0.5	6.9
559	FO-10117	1	1	1	6	608630.69	4051079.87	40mm TP	0.84	608630.65	4051079.95	1	Projectile, 40mm, practice, M918	8	TOI2	5.4	9.2
563	FO-50093	1	1	2	40	609753.85	4051255.55	Lg ISO 75cm	0.56	609753.78	4051255.15	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.2	41.4
564	FO-35059	1	1	2	32	609602.02	4051174.70	75mm 2	0.34	609601.97	4051174.34	40	Projectile, 75mm, Shrapnel, MK I	23	TOI2	7.7	35.9
565	FO-25062	1	1	2	30	609831.27	4051084.14	75mm 2	0.34	609831.26	4051084.13	34	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.1	1.4
566	FO-10081	1	1	1	19	608638.29	4051085.48	40mm TP	0.79	608638.33	4051085.16	8	Projectile, 40mm, practice, M918	8	TOI2	10.8	32.2
571	FO-20404	1	1	2	21	609840.97	4051046.61	75mm 2	0.49	609841.04	4051046.46	20	Projectile, 75mm, Shrapnel, MK I (SAME AS 20017)	23	TOI2	0.9	17.1
574	FO-10098	1	1	1	10	608628.97	4051090.55	40mm TP	0.62	608628.84	4051090.69	11	Projectile, 40mm, practice, M918	8	TOI2	1.4	18.9
577	FO-10009	1	1	2	29	608627.21	4051079.15	81mm TP	0.52	608627.11	4051079.13	30	Projectile, 75mm, Shrapnel, MK I (SAME AS 11203)	23	TOI2	0.9	9.8
578	FO-40806	1	1	1	16	608271.85	4051095.76	40mm TP	0.87	608271.86	4051095.74	13	Seeded Item (SAME AS 40322)	9	TOI2	3.2	2.4
582	FO-10239	1	1	1	14	608635.99	4051066.90	40mm TP	0.57	608636.01	4051066.98	12	Projectile, 40mm, practice, M918 (SAME AS 11646)	8	TOI2	1.7	8.1
586	FO-10030	1	1	1	12	608633.71	4051070.79	40mm TP	0.93	608633.60	4051070.84	9	Projectile, 40mm, practice, M918	8	TOI2	2.7	11.9
588	FO-10103	1	1	1	7	608638.82	4051083.15	40mm TP	0.61	608638.77	4051083.15	7	Projectile, 40mm, practice, M918	8	TOI2	0.1	5.4
590	FO-25776	1	1	2	45	609840.73	4051057.88	81mm TP	0.52	609840.77	4051057.98	26	Projectile, 75mm, Shrapnel, MK I	23	TOI2	19.0	10.4
594	FO-10128	1	1	1	13	608626.17	4051067.78	40mm TP	0.41	608626.22	4051067.78	5	Projectile, 37mm, low explosive, MK II	8	TOI2	8.0	4.9
594	FO-10128	1	1	1	13	608626.17	4051067.78	40mm TP	0.41	608626.22	4051067.78	13	Projectile, 40mm, practice, M918	8	TOI2	0.0	4.9
595	FO-40146	1	1	1	15	608268.54	4051086.46	40mm TP	0.57	608268.53	4051086.49	4	Projectile, 40mm, practice, M918	9	TOI2	11.0	2.9
596	FO-40322	1	1	1	12	608271.81	4051095.85	40mm TP	0.59	608271.85	4051095.74	13	Seeded Item (SAME AS 40806)	9	TOI2	0.6	11.3
605	FO-25384	1	1	2	30	609801.91	4051043.40	75mm 2	0.49	609801.91	4051043.37	31	Projectile, 75mm, Shrapnel, MK I	23	TOI2	0.9	3.1
607	FO-41468	1	1	1	10	608282.46	4051100.59	40mm TP	0.45	608282.52	4051100.57	10	Projectile, 40mm, practice, M918 (SAME AS 40089)	9	TOI2	0.0	6.2
610	FO-10077	1	1	1	15	608624.97	4051075.48	40mm TP	0.74	608624.94	4051075.58	13	Projectile, 40mm, practice, M918	8	TOI2	1.7	10.4
611	FO-10434	1	1	1	13	608629.88	4051068.26	40mm TP	0.61	608629.96	4051068.12	10	Projectile, 40mm, practice, M918	8	TOI2	3.3	15.8
622	FO-50122	1	1	2	23	609795.31	4051154.72	81mm TP	0.48	609795.27	4051154.66	20	Projectile, 75mm, high explosive, MK I	33	TOI2	2.8	6.9
623	FO-40035	1	1	2	28	608307.66	4051096.24	81mm TP	0.48	608307.66	4051096.26	14	Projectile, 75mm, Shrapnel, MK I	23	TOI2	14.4	1.9
627	FO-10163	1	1	1	17	608625.14	4051124.69	40mm TP	0.60	608625.09	4051124.73	7	Projectile, 40mm, practice, M918	8	TOI2	10.1	6.6
628	FO-11121	1	1	1	80	608623.66	4051081.29	105 Projo	0.47	608623.68	4051081.28	73	Projectile, 4.2inch, mortar, illumination, M335 series (SAME AS 10008, SAME AS 10365)	45	TOI2	6.6	2.6
633	FO-10314	1	1	1	12	608627.45	4051066.48	40mm TP	0.71	608627.53	4051066.50	12	Projectile, 40mm, practice, M918	8	TOI2	0.1	7.9
636	FO-25053	1	1	2	8	609800.68	4051048.72	57mm TP	0.41	609801.23	4051048.41	34	Projectile, 75mm, Shrapnel, MK I	23	TOI2	25.5	63.4
644	FO-40070	1	1	1	12	608280.75	4051087.49	40mm TP	0.66	608280.76	4051087.50	8	Projectile, 40mm, practice, M918	9	TOI2	4.1	1.2
647	FO-11799	1	1	1	8	608627.32	4051071.61	40mm TP	0.76	608627.26	4051071.83	5	Projectile, 40mm, practice, M918 (SAME AS 10286)	8	TOI2	3.0	22.5
659	FO-25085	1	1	2	50	609822.69	4051084.86	105 Projo	0.50	609823.14	4051084.92	85	Projectile, 155mm, shrapnel, MK 1	34	TOI2	34.6	46.2
666	FO-25076	1	1	2	26	609812.82	4051077.28	75mm 2	0.34	609812.81	4051077.27	30	Projectile, 75mm, Shrapnel, MK I	23	TOI2	4.2	1.9
679	FO-50131	1	1	3	77	609809.64	4051214.03	155mm TP	0.44	609809.62	4051214.13	69	Projectile, 155mm, shrapnel, MK 1	34	TOI2	8.1	10.3
690	FO-10066	1	1	1	5	608641.56	4051085.55	40mm TP	0.56	608641.38	4051085.61	6	Projectile, 40mm, practice, M918	8	TOI2	1.1	19.1
711	FO-10959	1	1	1	12	608629.14	4051070.68	40mm TP	0.67	608629.20	4051070.63	9	Projectile, 40mm, practice, M918	8	TOI2	3.3	7.5
715	FO-50121	1	1	2	78	609791.97	4051231.89	155mm #4-b TP	0.47	609792.20	4051231.82	71	Projectile, 155mm, shrapnel, MK 1	34	TOI2	6.6	24.7
717	FO-10288	1	1	1	14	608633.22	4051068.56	40mm TP	0.56	608633.26	4051068.52	10	Projectile, 40mm, practice, M918	8	TOI2	4.3	5.3
723	FO-40390	1	1	1	17	608261.73	4051110.33	40mm TP	0.88	608261.74	4051110.34	14	Projectile, 40mm, practice, M918	8	TOI2	2.6	0.9
743	FO-10150	1	1	1	14	608622.53	4051073.60	40mm TP	0.82	608622.42	4051073.71	9	Projectile, 40mm, practice, M918	8	TOI2	4.7	15.2
748	FO-40131	1	1	2	33	608268.40	4051067.84	Med ISO 65cm	0.66	608268.49	4051067.84	20	Seeded Item	10	TOI2	13.5	8.8
767	FO-40333	1	1	2	20	608263.63	4051097.70	75mm 2	0.59	608263.63	4051097.64	15	Projectile, 75mm, Shrapnel, MK I (SAME AS 40706 & 40007)	23	TOI2	5.2	5.8
769	FO-10198	1	1	1	13	608628.18	4051073.72	40mm TP	1.04	608628.20	4051073.71	6	Projectile, 40mm, practice, M918	8	TOI2	6.7	2.3
774	FO-25074	1	1	2	26	609790.32	4051025.42	Med ISO 26cm	0.81	609790.25	4051025.44	30	Seeded Item	29	TOI2	3.6	6.8
798	FO-10286	1	1	1	9	608627.26	4051071.83	40mm TP	0.75	608627.26	4051071.83	5	Projectile, 40mm, practice, M918 (SAME AS 11799)	8	TOI2	3.7	0.7
801	FO-40089	1	1	1	10	608282.48	4051100.59	40mm TP	0.63	608282.52	4051100.56	10	Projectile, 40mm, practice, M918 (SAME AS 41468)	9	TOI2	0.1	4.6
813	FO-37916	1	1	2	59	609651.23	4051198.78	105 Projo	0.62	609651.47	4051198.77	30	Projectile, 37mm, armor piercing tracer, M51 series	13	TOI2	29.1	24.2
818	FO-20604	1	1	1	9	609830.96	4051032.68	37mm	0.58	609830.88	4051032.65	40	Projectile, 75mm, shrapnel, MK I	23	TOI2	30.8	8.6
822	FO-40150	1	1	1	9	608291.81	4051085.85	40mm TP	0.95	608291.84	4051085.81	2	Projectile, 40mm, practice, M918	8	TOI2	7.2	5.4

Inversion Results										Dig Results						Offsets	
Dig #	Target ID:	Category	Dig Decision	TOI Size Band	Depth	Easting (m)	Northing (m)	L123 Ord	L123 misfit	Easting	Northing	Recovered Depth	Identification	Length	Dig Type	d Depth	d xy
823	FO-40248	1	1	1	28	608292.80	4051100.62	37mm	0.71	608292.81	4051100.57	26	Seeded Item	10	TOI2	2.4	5.3
856	FO-25105	1	1	2	27	609837.71	4051078.67	81mm Illum	0.54	609837.63	4051078.63	33	Projectile, 75mm, Shrapnel, MK I	23	TOI2	5.5	9.8
948	FO-25206	1	1	3	83	609793.86	4051039.55	155mm #4-b TP	0.54	609793.65	4051039.48	82	Projectile, 155mm, shrapnel, MK 1	34	TOI2	0.7	22.2
949	FO-25340	1	1	3	33	609830.96	4051078.32	81mm TP	0.54	609830.88	4051078.28	25	Projectile, 75mm, Shrapnel, MK I	24	TOI2	8.4	9.5
986	FO-10045	1	1	1	16	608634.58	4051073.34	20mm	0.61	608634.26	4051073.62	15	Projectile, 40mm, practice, M918	8	TOI2	1.0	42.9
1034	FO-10170	1	1	1	130	608667.57	4051118.43	155mm #4-a TP	0.83	608668.38	4051117.64	2	Projectile, 40mm, practice, M918	5	TOI2	128.0	113.3
1058	FO-40655	1	1	2	9	608281.66	4051084.48	20mm	0.93	608281.67	4051084.43	6	Projectile, 20mm, target practice, M99	8	TOI2	2.7	5.4
1063	FO-25135	1	1	2	13	609838.37	4051063.31	75mm 2	0.54	609838.38	4051063.33	10	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.4	1.9
1075	FO-41691	1	1	1	3	608253.56	4051097.81	40mm TP	0.93	608253.56	4051097.77	3	Projectile, 40mm, practice, M918	8	TOI2	0.1	3.7
1116	FO-40199	1	1	1	4	608305.47	4051074.54	40mm TP	0.91	608305.51	4051074.46	3	Projectile, 40mm, practice, M918	8	TOI2	1.1	8.7
1167	FO-40040	1	1	1	21	608279.39	4051087.73	Med ISO 65cm	0.72	608279.51	4051087.72	29	Projectile, 75mm, Shrapnel, MK I (SAME AS 40325 & 40956)	23	TOI2	7.8	11.4
1272	FO-10738	1	1	1	42	608622.71	4051065.16	Med ISO 65cm	1.01	608624.10	4051065.55	19	Projectile, 40mm, practice, M918	8	TOI2	22.7	145.2
1301	FO-40546	1	1	1	4	608256.70	4051081.95	20mm	0.46	608256.68	4051081.87	3	Projectile, 20mm, target practice, M99	8	TOI2	1.1	8.6
1380	FO-10436	1	1	1	21	608625.81	4051096.15	60mm TP	0.67	608625.84	4051095.85	9	Projectile, 40mm, practice, M918 (SAME AS 10028-1)	8	TOI2	12.1	30.8
1429	FO-50094	1	1	2	36	609763.01	4051087.14	81mm Illum	0.70	609763.08	4051087.35	73	Projectile, 4.2inch, mortar, illumination, M335 series	43	TOI2	36.8	22.2
1462	FO-25021	1	1	2	12	609814.42	4051062.02	2.36" Rkt TP	0.71	609814.45	4051061.96	15	Projectile, 75mm, Shrapnel, MK I	23	TOI2	3.5	6.9
1544	FO-40392	3	0		45	608288.01	4051079.51	2.36" Rkt TP	0.76	608288.10	4051079.76	24	Seeded Item	8	TOI2	21.4	27.1
1547	FO-40771	3	0		16	608278.19	4051088.56	20mm	0.76	608278.23	4051088.50	12	Projectile, 20mm, target practice, M99	8	TOI2	4.5	7.8
1610	FO-10087	3	0		9	608681.48	4051109.50	40mm TP	0.79	608681.49	4051109.47	2	Projectile, 40mm, practice, M918	5	TOI2	7.3	2.8
1658	FO-35030	3	0		23	609648.86	4051182.19	Med ISO TP	0.81	609648.86	4051182.19	24	Seeded Item	20	TOI2	0.5	0.4
1661	FO-10312	3	0		6	608627.86	4051077.99	40mm TP	0.81	608627.88	4051077.93	12	Projectile, 40mm, practice, M918	6	TOI2	5.6	5.7
1691	FO-20569	3	0		11	609817.24	4051050.09	20mm	0.82	609817.24	4051049.23	12	Rocket, 35mm, subcaliber, practice, M73	20	TOI2	1.3	86.1
1698	FO-20164	3	0		43	609811.34	4051052.00	81mm Illum	0.83	609811.71	4051052.35	3	Projectile, 40mm, practice, M781	4	TOI2	40.4	51.1
1768	FO-25129	3	0		27	609790.91	4051036.54	57mm TP	0.85	609790.96	4051036.58	39	Projectile, 75mm, Shrapnel, MK I	23	TOI2	12.5	6.0
1872	FO-10032	3	0		7	608630.98	4051080.12	60mm TP	0.88	608630.20	4051080.55	23	Projectile, 60 mm, illumination, M83 series	22	TOI2	15.6	89.0
2095	FO-10228	3	0		0	608635.89	4051087.29	20mm	0.98	608635.46	4051087.50	2	Projectile, 40mm, practice, M918 (nose only)	4	TOI2	2.0	48.2
2342	FO-10372	3	0		10	608637.06	4051086.18	20mm	1.09	608636.78	4051086.16	8	Projectile, 40mm, practice, M918 (nose only)	4	TOI2	2.2	28.6
2367	FO-10864	3	0		0	608626.66	4051074.12	20mm	1.11	608626.61	4051074.68	1	Projectile, 40mm, practice, M918 (SAME AS 10808-1)	3	TOI2	1.0	56.1
2589	FO-20504	3	0		8	609827.89	4051030.01	20mm	1.27	609827.73	4051030.03	8	Rocket, 35mm, subcaliber, practice, M73	20	TOI2	0.1	15.9
2687	FO-10808	3	0		10	608626.81	4051074.60	20mm	1.39	608626.61	4051074.68	1	Projectile, 40mm, practice, M918 (SAME AS 10864-1)	3	TOI2	8.6	21.5
2703	FO-20633	3	0		15	609816.10	4051025.71	40mm TP	1.43	609816.08	4051025.65	10	Rocket, 35mm, subcaliber, practice, M73	20	TOI2	4.9	6.5

APPENDIX F METADATA FILES AND DGM DATA

To be provided electronically on CD